Energy, Mines and Resources Canada
Énergie, Mines et Ressources Canada

ENERGY OVERVIEW STUDY FOR REMOTE COMMUNITIES IN BRITISH COLUMBIA

Prepared under the Remote Community Demonstration Program

SIGMA ENGINEERING LTD

ENERGY, MINES AND RESOURCES CANADA

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SIGMA ENGINEERING LTD 1983

In Association with
SAR ENGINEERING LTD
ROBINSON CONSULTING AND ASSOCIATES

REMOTE COMMUNITY DEMONSTRATION PROGRAM
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SUMMARY

The Remote Community Demonstration Program is designed to help isolated communities improve their energy situation by finding viable means of reducing the use of petroleum based fuels for space heating and power generation. The Energy Overview Study for Remote Communities in British Columbia is an early stage of the program intended to catalogue and profile the energy use patterns of the communities to assist Energy, Mines and Resources Canada in decisions regarding the allocation of funding for feasibility studies and subsequent demonstration projects.

Remote communities in British Columbia exist for a variety of reasons and for the purpose of this program they are broadly defined as having at least 10 principal dwelling units, at least 5 years of planned life remaining and no firm commitment for connection to the electrical grid or the natural gas network.

The Remote Community Demonstration Program is operating in every region of Canada, but it is especially relevant to British Columbia where about 90 of the 300 to 400 remote communities are located.

A large proportion of the remote communities (45 percent) are associated exclusively with resource development, such as forestry and mining camps. Although described as camps, these communities usually have more than 10 years of planned life remaining and provide a high level of employment for most of the year. The second largest group of communities, accounting for 30 percent of the total, exists for historical reasons, as people have traditionally lived at the location. Six of these communities have a strong resource base while the others have a low level of employment. The remaining remote communities (each accounting for 5 - 10 percent of the total) are categorized as: catering to tourism including recreational properties; agricultural centres including farming and ranching; and settlements which have developed on transportation routes.

The majority of remote communities generate high levels of employment and as such they make a significant contribution to the provincial economy. Forestry and mining operations especially, create direct employment, pay royalties to government, provide export income and provide indirect employment through shipping, processing and equipment supply.

The energy use patterns of remote communities cover a broad range from nearly zero use of oil (at native communities with no household power and wood heat) to industrial communities where oil is used exclusively for heat, power generation, transportation and industrial processes. In some areas the use of oil for space heating is more than double the use for the equivalent situation in the Lower Mainland, due to the climatic conditions. In the report these patterns are developed on a comparative basis for all the remote communities where there is sufficient information.

Most of the remote communities have cost effective options open to them which remain unutilized, for the development of renewable energy resources and for the conservation of energy. Depending on the community location, size and energy requirements, viable energy solutions may be found in the fields of conservation, energy management, grid extensions, small hydro power, wood fuel, solar power, wind power and geothermal energy. The development of some of these methods to reduce oil consumption will involve careful economic analysis, creative financing and some measure of encouragement from various levels of government, together with an awareness in the community of the range of options available.

1. INTRODUCTION

1.1 BACKGROUND

The Remote Community Demonstration Program was introduced by Energy Mines and Resources Canada (EMR) in 1982 as part of the National Energy Program.

It was recognized by the Federal Government that, whereas the heavily settled areas of Canada were well served by efficient electrical power grids as well as natural gas networks in some regions, many isolated communities were dependent on costly oil products for space heating and power generation. Therefore the Remote Community Demonstration Program is focussed on promoting an awareness of oil substitution opportunities for these isolated communities.

A key objective of the program is to demonstrate alternative energy systems and technologies. This will mainly be achieved by assisting in the funding of energy planning, project feasibility studies and practical demonstrations of energy production or energy conservation systems, which result in the displacement of oil usage.

The rugged terrain of British Columbia and the long distances between the remote population centres typically imply unacceptably high costs for the electrical and gas distribution systems. As a result these communities have been forced to provide their own local energy system, despite the fact that they make a significant contribution to the provincial economy, particularly in forest and mineral production.

The purpose of this report is to provide the necessary background information to assist EMR and the remote communities in the implementation of feasibility studies and demonstration projects related to energy conservation and the development of renewable energy. Energy technologies and analytical methods are demonstrated to provide access to proven and cost effective ways to reduce oil consumption.

The broad criteria for the allocation of a portion of the necessary funding by EMR to a community are that the proposed project must have some relevance to other communities and energy situations in Canada, and it must be economically sound.

The main purpose of the Remote Community Demonstration Program is to demonstrate to the remote communities, first the ways of analysing the energy problems of a community, then the methodology for implementing solutions. Therefore the selection of appropriate communities for feasibility studies and later projects must take careful account of the demonstration value of each project and of the total sample.

1.2 TERMS OF REFERENCE

Detailed terms of reference were provided for the study by the Conservation and Renewable Energy Office of Energy, Mines and Resources Canada and are summarized below:

- define the remote communities in British Columbia and analyse, verify and update the information collected by Energy, Mines and Resources Canada in a questionnaire sent to remote communities. Some information on remote communities may also be obtained by analysing documents within other government agencies, and the policies and priorities of these agencies and others with energy concerns in remote communities will be outlined;

- prepare community profiles based on the information obtained, covering physical layout (including building types and transportation amenities), demographics, energy uses and energy supplies. The profiles will be based on a standard questionnaire;

- review the history, economic base and growth potential of the remote communities, together with trends in sources and costs of the energy supplies which the communities use;

- assess the opportunities for conserving energy in the whole community, the present state of implementation of energy conservation measures and community awareness of conservation options;

- evaluate the potential for alternative energy sources (to oil) emphasizing practical schemes;

- identify the possible social and environmental issues in respect of potential viable energy sources;

- identify the capability of remote communities to manage and operate the potential alternative energy sources and implement energy conservation strategies.

The outcome of the overview study will be a practical manual that will enable the Remote Community Demonstration Program to proceed on a sound basis to achieve the following objectives:

- provide guidelines for the selection of feasibility study proposals for remote community demonstration projects, to ensure effective use of the available funds across a range of communities (with varying size, location and economic base) and a range of practical alternative energy sources;

- provide access to facts about the remote communities with respect to their energy situations, which will allow comparisons to be made between communities of similar energy patterns and which will assist in the selection of future alternate energy and energy conservation programs.

2. METHODOLOGY

2.1 GENERAL

The study methodology was designed to collect and handle as much data as possible. The nature of the study required two types of research, namely research into community information and research into technical and economic information.

2.2 COMMUNITY INFORMATION

Community information was collected by a direct questionnaire, as detailed in Section 3 and Appendix 2. Other contacts were also made through the Canada Mortgage and Housing Corporation, Regional Districts, the provincial Ministry of Energy, Mines and Petroleum Resources, Indian and Northern Affairs Canada, B C Hydro, Statistics Canada and the B C Chamber of Mines. It soon became evident that most of these agencies knew only a few facts about the communities in their jurisdiction and that site specific information would mainly have to originate from the communities themselves. Accordingly efforts were made to contact as many communities as possible by phone, followed by sending the questionnaire.

Replies to the questionnaire were analysed with a computerized data base, which permitted the interpretation of large volumes of repetitive data. The questionnaire was structured so that most of the questions could be answered with a number or a category choice, which facilitated input and manipulation of the data. Other equations were included with the data base to facilitate manipulation of the derived data.

As an example of data manipulation, consider the energy used for home heating. Given the number of homes heated with oil, the price of oil and the quality of house construction (supplied by the questionnaire); the degree days of heating for the area and the average heating requirements for the type of

housing (supplied to the computer); then a determination can be made for the cost or volume of oil used in the community for home heating purposes. This calculation can be repeated for each community and totalled for the entire data set or aggregated by category.

Where communities did not respond to the questionnaire, they normally fitted into a category which allowed interpolation to be performed. Some flexibility was allowed with the questionnaire as all categories of response could not be pre-determined. Where there were enough respondents answering a question with a category that was not originally considered, the additional category was created within the data base and analysed. Only the most obscure or insignificant answers were omitted, as there are limitations to the size of the data base and one of a kind answers cannot be easily compared with other responses. A discussion of the methodology for calculating community energy use is shown in Appendix 1. Listings of communities and Regional Districts are provided at the end of this section in Table 2.1 and Table 2.2, and the locations of the communities are shown on Figure 1.1.

2.3 TECHNICAL AND ECONOMIC INFORMATION

Research into technical and economic information was carried out by the specialist consultants, mainly using their experience and background knowledge in the fields of alternative energy sources, conservation methods and economic trends. Much information has recently become available in the renewable energy field, including some studies relating to British Columbia. Economic indicators have also been based on the latest information, but most economic forecasts have been adjusted recently, and the trends must always be treated with some caution.

TABLE 2.1
LIST OF REGIONAL DISTRICTS AND REMOTE COMMUNITIES

Regional District	Community	Map No
Alberni - Clayoquot	Barclay Division	(66)
	Bamfield	(21)
	Hesquiaht	(40)
Bulkley - Nechako	Fort Babine	(24)
	Portage	(39)
	Germansen Landing	(45)
	Takla	(25)
Capital		
Cariboo	Anahim Lake	(15)
	Nazko Indian Band	(37)
	Nemaiah Valley	(28)
	Tatla Lake	(79)
Central Coast	Bella Bella	(6)
	Bella Coola	(2)
	Kilbella Bay	(75)
	Machmell	(55)
	Moses Inlet	(47)
	Nicknaqueet	(77)
	Owikeno	(67)
	Sheemahant	(80)
	Shotbolt	(78)
Central Fraser Valley		
Central Kootenay		
Central Okanagan		
Columbia - Shuswap	Field	(19)
	Seymour Arm	(23)
	Trout Lake	(51)
Comox - Strathcona	Greenwood Camp	(74)
	Kyuquot	(18)
	Mooya Bay	(65)
	Phillips Arm	(61)
	Quatam River	(62)
	Western Mines	(84)
Cowichan Valley	Nitinaht	(41)

Regional District	Community	Map No
Dewdney Alouette	Boulder Bay	(68)
	Pitt Lake	(54)
	Stave Lake	(49)
East Kootenay		
Fraser - Cheam	Hornet	(85)
	Port Douglas	(64)
Fraser - Fort George	Dome Creek	(12)
	Longworth	(50)
	Penny	(46)
Greater Vancouver		
Kitimat - Stikine	Bob Quinn Lake	(91)
	Hartley Bay	(24)
	Iskut/Eddontenajon	(22)
	Klemtu	(17)
	Meziadin Lake	(90)
	Scotty Gold	(43)
	Stewart	(5)
	Telegraph Creek	(16)
	Tide Lake	(34)
Kootenay Boundary	Christian Valley	(86)
Mt Waddington	Acteon Sound	(56)
	Barr Creek	(87)
	Cleagh Creek	(71)
	Drury Inlet	(73)
	Gilford Island	(48)
	Holberg DND	(7)
	Holberg	(10)
	Kingcome Inlet	(31)
	Kingcome Inlet	(72)
	Knight Inlet	(59)
	Mahatta River	(26)
	Nuchatlaht	(76)
	Scott Cove	(69)
	Seymour Inlet	(70)
	Simoon Sound	(81)
	Timfor	(57)
	Tom Brown Lake	(60)
	Vernon (Camp)	(20)
	Wakeman Sound	(58)
	Woss	(9)

Regional District	Community	Map No
Nanaimo		
Okanagan - Similkameen	Eastgate	(52)
	Manning	(36)
Peace River - Liard	Fort Ware	(32)
	Lower Post	(35)
	Prophet River	(44)
	Toad River	(42)
Powell River	Lasqueti Island	(8)
	Savary Island	(82)
Skeena - Queen Charlotte	Juskatla	(38)
	Kitkatla	(13)
	Masset	(1)
	Sandspit	(3)
	Sewell Inlet	(27)
Stikine	Atlin	(11)
	Baker Mine Camp	(83)
	Cassiar	(4)
	Dease Lake	(14)
	Erickson Gold Mine	(33)
	Good Hope Lake	(92)
Squamish - Lillooet		
Sunshine Coast	Earls Creek	(88)
	McNab Camp	(89)
	Narrows Inlet	(53)
	Sechelt Creek	(63)
Thompson - Nicola	Big Bar/Jesmond	(30)

TABLE 2.2

LIST OF REMOTE COMMUNITIES AND POPULATIONS

Community	Map No (Fig 1)	Population	Regional District
Acteon Sound	56	45	Mt Waddington
Anahim Lake	15	372	Cariboo
Atlin	11	475	Stikine
Baker Mine	83	30	Stikine
Bamfield	21	250	Alberni - Clayoquot
Barclay Division (Kildonan)	66	45	Alberni - Clayoquot
Barr Creek	87	25	Mt Waddington
Bella Bella	6	1414	Central Coast
Bella Coola	2	3047	Central Coast
Big Bar/Jesmond	30	150	Thompson - Nicola
Bob Quinn Lake	91	17	Kitimat - Stikine
Boulder Bay	68	45	Dewdney - Alouette
Cassiar	4	1850	Stikine
Christian Valley	86	26	Kootenay Boundary
Cleagh Creek	71	45	Mt Waddington
Dease Lake	14	450	Stikine
Dome Creek	12	475	Fraser - Ft George
Drury Inlet	73	45	Mt Waddington
Earls Creek	88	25	Sunshine Coast
Eastgate	52	50	Okanagan - Similameen
Erickson Gold Mine	33	130	Stikine
Field	19	279	Columbia Shuswap
Fort Babine	29	170	Bulkley Nechako
Fort Ware	32	145	Peace River - Liard
Germansen Landing	45	77	Bulkley Nechako
Gilford Island	48	67	Mt Waddington
Good Hope Lake	92	12	Stikine
Greenwood Camp	74	44	Comox Strathcona
Hartley Bay	24	214	Kitimat Stikine
Hesquiaht	40	90	Alberni - Clayoquot
Holberg	10	476	Mt Waddington
Holberg DND	7	650	Mt Waddington
Hornet	85	30	Fraser - Cheam
Iskut/Eddontenajon	22	250	Kitimat - Stikine

Community	Map No (Fig 1)	Population	Regional District
Juskatla	38	100	Skeena-Queen Charlotte
Kilbella Bay	75	41	Central Coast
Kingcome Inlet	31	147	Mt Waddington
Kingcome Inlet (Whonnock)	72	45	Mt Waddington
Kitkatla	13	463	Skeena - Queen Charlotte
Klemtu	17	314	Kitimat - Stikine
Knight Inlet	59	45	Mt Waddington
Kyuquot	18	300	Comox - Strathcona
Lasqueti Island	8	587	Powell River
Longworth	50	53	Fraser - Ft George
Lower Post	35	123	Peace River - Liard
Machmell	55	45	Central Coast
Mahatta River	26	195	Mt Waddington
Manning Provincial Park	36	121	Okanagan - Similkameen
Masset	1	3175	Skeena - Queen Charlotte
McNab Camp	89	19	Sunshine Coast
Meziadin Lake	90	17	Kitimat - Stikine
Mooya Bay (Ncotka)	65	45	Comox - Strathcona
Moses Inlet	47	70	Central Coast
Narrows Inlet	53	45	Sunshine Coast
Nazko Indian Band	37	113	Cariboo
Nemaiah Valley	28	175	Cariboo
Nicknaqueet	77	40	Central Coast
Nitinaht	41	81	Cowichan Valley
Nuchatlaht	76	40	Mt Waddington
Owikeno	67	45	Central Coast
Penny	46	74	Fraser - Ft George
Phillips Arm	61	45	Comox - Strathcona
Pitt Lake	54	45	Dewdney - Alouette
Port Douglas	64	45	Fraser Cheam
Portage (Nancut)	39	95	Bulkley - Nechako
Prophet River	44	78	Peace River - Liard
Quatam River	62	45	Comox - Strathcona
Sandspit	3	300	Skeena - Queen Charlotte
Savary Island	82	31	Powell River
Scott Cove	69	45	Mt Waddington
Scotty Gold	43	80	Kitimat Stikine

Community	Map No (Fig 1)	Population	Regional District
Sechell Creek	63	45	Sunshine Coast
Sewell Inlet	27	182	Skeena - Queen Charlotte
Seymour Arm	23	217	Columbia Shuswap
Seymour Inlet	70	45	Mt Waddington
Sheemahant	80	32	Central Coast
Shotbolt	78	40	Central Coast
Simoon Sound	81	32	Mt Waddington
Stave Lake	49	55	Dewdney - Alouette
Stewart	5	1456	Kitimat - Stikine
Takla	25	208	Bulkley - Nechako
Tatla Lake	79	37	Cariboo
Telegraph Creek	16	350	Kitimat - Stikine
Tide Lake	34	125	Kitimat - Stikine
Timfor	57	45	Mt Waddington
Toad River Area	42	80	Peace River - Liard
Tom Brown Lake	60	45	Mt Waddington
Trout Lake	51	50	Columbia Shuswap
Vernon (Camp)	20	251	Mt Waddington
Wakeman Sound	58	45	Mt Waddington
Western Mines	84	30	Comox - Strathcona
Woss	9	548	Mt Waddington

3. QUESTIONNAIRE

3.1 GENERAL

As discussed in Section 2, the questionnaire was the most important information gathering tool in the study, and was based on an earlier questionnaire prepared and distributed in mid 1982 by Energy, Mines and Resources Canada to remote communities.

The earlier questionnaire was of considerable value, not only for the basic format it established but also for providing insight into the range of answers that could be received from the questions. When a modified questionnaire was prepared for this study, the experience was taken into account by rephrasing some questions to attempt to eliminate misinterpretation. Some new questions were added to provide additional information, while others were revised to request more detailed information.

The questionnaire was also restructured to provide numerical or categorical responses which could then be easily incorporated into the computerized data base. The revisions concentrated on areas dealing with economic conditions, housing categories, heating systems and the level of awareness with regard to energy alternatives.

3.2 DISTRIBUTION OF QUESTIONNAIRE

Once the questionnaire format was prepared the study emphasis was concentrated on finding as many eligible remote communities as possible. The program guidelines required the community to have at least 10 principal dwelling units, at least 5 years of planned life remaining and no firm commitment for an electrical grid or gas connection.

The starting point for the work was the report "Renewable Energy in Remote Locations, Energy Demand and Resource Base" (TRU, 1980), which provided a listing of remote communities across Canada. In British Columbia, 62 communities were listed. However, 16 of these were determined to be on the electrical grid, one was on a natural gas line and 3 were disqualified because they did not meet other criteria of the program. The communities in this study were grouped into categories which represented the agency or industry responsible for electrical generation, namely: B C Hydro, Indian Affairs, Forestry, Mining and Miscellaneous. A listing was also obtained from Energy, Mines and Resources Canada covering the contacts made in all categories for the first questionnaire.

B C Hydro serves in aggregate the largest remote population in British Columbia, a total of 12 communities with a population of about 12,000. Information was obtained from B C Hydro on two levels. The first was to obtain technical information from head office on the characteristics of remote installations with respect to energy supply, costs and revenues, as well as background plans for remote community electrification. The second level involved contacting the operators or managers at each remote diesel plant to complete the questionnaire and thus obtain a local viewpoint of the energy situation.

Indian and Northern Affairs Canada was also a contact agency for a significant number of remote communities with a relatively stable population. Excluding those areas already served by B C Hydro diesel systems, there were 17 communities with a total population of about 2600 which were dependent on their own power sources. Information was obtained from the regional office for general background information and from the district offices for more site specific information. A few replies were also received directly from the Indian Bands.

The forestry and mining industries were contacted directly, either through company head offices or camp representatives.

The forest industry is the dominant economic factor in about 6 of the mixed communities, while several other communities are company operated with large permanent populations. The forest industry also represents a large number of small communities, many of which operate for about 9 months of the year during normal economic conditions. The newer camps are planned for up to a 20 year lifespan. There were about 35 camps identified, with some companies responsible for more than 5 camps each.

The mining industry operates camps with steady year round populations. The Chamber of Mines provided a list of mine sites known to be operating on diesel power. It was found that two of the sites used their own generators, but that the work force commuted on a daily basis and all of the power was used for industrial purposes. These were not considered to be remote communities for the purpose of this study. The remaining 6 communities generated their own power for residential and industrial purpose although the residential component is relativeiy small.

The miscellaneous category covers 22 organized and unorganized communities, which includes Ministry of Highways camps, fishing villages, recreational communities, military posts and agricultural communities. Direct and indirect contacts were made by phone, but in a few instances only a letter could be sent and a reply was uncertain. Individuals who replied to the earlier version of the questionnaire issued by EMR have usually responded to the updated version, as their original answers were included to avoid duplication. Regional Districts were helpful in establishing contacts but these contacts did not always provide the information. In such instances there is usually enough information available from similar communities and climate zones to make a judgment on an energy use pattern.

The identified remote communities and their categories are shown in Table 3.1 at the end of this section.

3.3 RESULTS OF QUESTIONNAIRE

Questionnaires were sent to a total of 51 contacts representing 104 remote communities. Of these, 48 direct replies were returned representing 71 communities. Where no reply was received after a reasonable time, follow up calls were made. Follow up calls were also made to clarify some points on the returned questionnaires, where necessary. For the 21 communities where no reply to the questionnaire was obtainable, basic community information was obtained from the census, the earlier EMR questionnaire, or the agencies named in Section 3.2.

In general, the information obtained from the questionnaire was suitable for direct input to the computerized data base with little interpretation needed. The information has been organized and analysed in Section 4. Community locations and populations are shown in Figure 1.1 and Figure 2.

TABLE 3. 1

LIST OF REMOTE COMMUNITIES AND CATEGORIES (Page 1 of 4)

No.	Population	Community	Category					Source(1)
			B C Hydro	DINA	Forestry	Mining	Misc	
1.	3175	Masset	X					Q
2.	3047	Bella Coola	X					P
3.	3000	Sandspit	X					Q
4.	1850	Cassiar				X		Q
5.	1456	Stewart	X					Q
6.	1414	Bella Bella	X					P
7.	650	Holberg DND					X	Q
8.	587	Lasqueti Island					X	Q
9.	548	Woss			X			Q
10.	476	Holberg			X			Q
11.	475	Atlin	X					Q
12.	475	Dome Creek					X	Q
13.	463	Kitkatla		X				P
14.	450	Dease Lake	X					Q
15.	372	Anahim Lake	X					P
16.	350	Telegraph Creek	X					Q
17.	314	Klemtu		X				Q
18.	300	Kyuquot		X				P
19.	270	Field					X	Q
20.	251	Vernon			X			Q
21.	250	Bamfield	X					Q
22.	250	Iskut/Eddontenajon	X					Q
23.	217	Seymour Arm					X	Q
24.	214	Hartley Bay		X				P
25.	208	Takla		X				Q

TABLE 3. 1

LIST OF REMOTE COMMUNITIES AND CATEGORIES (Page 2 of 4)

No.	Population	Community	Category					Source[1]
			B C Hydro	DINA	Forestry	Mining	Misc	
26.	195	Mahatta River			X			Q
27.	182	Sewell Inlet			X			Q
28.	175	Nemaiah Valley		X				Q
29.	170	Fort Babine IR #6		X				Q
30.	150	Big Bar/Jesmond					X	Q
31.	147	Kingcome		X				Q
32.	145	Fort Ware		X				Q
33.	130	Erickson Gold Mine				X		Q
34.	125	Tide Lake				X		I
35.	123	Lower Post					X	I
36.	121	Manning Park					X	Q
37.	113	Nazko Indian Band		X				Q
38.	100	Juskatla			X			P
39.	95	Portage (Nancut)		X				Q
40.	90	Hesquiaht		X				Q
41.	81	Nitinaht		X				Q
42.	80	Toad River Area					X	Q
43.	80	Scotty Gold				X		I
44.	78	Prophet River		X				Q
45.	77	Germansen Landing					X	I
46.	74	Penny					X	I
47.	70	Moses Inlet			X			Q
48.	67	Gilford Island		X				P
49.	55	Stave Lake					X	P
50.	53	Longworth					X	I

TABLE 3. 1

LIST OF REMOTE COMMUNITIES AND CATEGORIES (Page 3 of 4)

No.	Population	Community	Category					Source[1]
			B C Hydro	DINA	Forestry	Mining	Misc	
51.	50	Trout Lake					X	Q
52.	50	Eastgate					X	Q
53.	45	Narrows Inlet			X			Q
54.	45	Pitt Lake			X			D
55.	45	Machmell			X			D
56.	45	Acteon Sound			X			D
57.	45	Timfor			X			D
58.	45	Wakeman Sound			X			D
59.	45	Knight Inlet			X			D
60.	45	Tom Brown Lake			X			D
61.	45	Phillips Arm			X			D
62.	45	Quatam River			X			D
63.	45	Sechell Creek			X			D
64.	45	Port Douglas			X			D
65.	45	Mooya Bay (Nootka)			X			D
66.	45	Barclay Div			X			D
67.	45	Owikeno		X				P
68.	45	Boulder Bay					X	P
69.	45	Scott Cove			X			Q
70.	45	Seymour Inlet			X			D
71.	45	Cleagh Creek			X			D
72.	45	Kingcome Inlet			X			D
73.	45	Drury Inlet			X			D
74.	44	Greenwood Camp			X			Q
75.	41	Kilbella Bay			X			Q

TABLE 3. 1

LIST OF REMOTE COMMUNITIES AND CATEGORIES (Page 4 of 4)

No.	Population	Community	Category					
			B C Hydro	DINA	Forestry	Mining	Misc	Source(1)
76.	40	Nuchatlaht		X				Q
77.	40	Nicknaqueet			X			D
78.	40	Shotbolt			X			D
79.	37	Tatla Lake	X					P
80.	32	Sheemahant			X			Q
81.	32	Simoon Sound					X	P
82.	32	Savary Island					X	I
83.	30	Baker Mine Camp				X		Q
84.	30	Western Mines				X		Q
85.	30	Hornet			X			D
86.	26	Christian Valley					X	Q
87.	25	Barr Creek			X			D
88.	25	Earls Creek			X			D
89.	19	McNab Camp			X			Q
90.	17	Meziadin Lake					X	Q
91.	17	Bob Quinn Lake					X	D
92.	12	Good Hope Lake					X	Q

(1) **Source** indicates the type of information received on a community:

- Q Questionnaire response
- D Duplicated response from similar community questionnaire
- P Partial response through several background sources, including EMR questionnaire
- I No direct response, minimal information available

4. ENERGY USE PATTERNS

4.1 GENERAL

The questionnaire results and other research into the energy use in remote communities in British Columbia have identified several patterns of energy use which depend on geography, the user group, the proportion of industrial energy use and the energy supplier. These patterns also exhibit a wide degree of variation, making it difficult to say with certainty what is the dominant influence. Details are noted in the following sections.

4.2 REGIONAL ENERGY USE PATTERNS

Regional electrical energy use patterns are perhaps best illustrated by an analysis of the B C Hydro diesel stations. Geographically, the plants cover the most northerly and southerly remote communities in the study, as well as coastal and interior sites. The plants also represent a cross section of economic characteristics, with the price structure and level of service consistent across sites. The sites are shown along with the other remote communities in Figure 1.1.

The characteristics of the sites are summarized in Table 4.1. based on the 1981-1982 fiscal year. By excluding the commercial/industrial sector a meaningful comparison can be made of the residential loads of the respective remote communities. The table indicates the diversity among sites which may often be contrary to initial expectations. The highest average loads were not found in the northern areas, but instead in mild coastal areas. Some possible explanations for this apparent discrepancy lie in the differences in housing stock noted and in incomes. Also, a higher proportion of seasonal residences will often lower the average power use.

The monthly load patterns shown in Figure 3 are more typical of the expected pattern, whereby the northern areas exhibit higher monthly loads in winter, compared with their average. Comparisons with provincial normals of electricity use (grid system) are provided in Section 4.5.

TABLE 4.1

REGIONAL ELECTRICAL ENERGY USE
(As expressed by production records of B C Hydro diesel plants)

Community	Recidential Customers	Total kW.h (Residential)	Percent** of Total	Avg kW.h (Residential)	System Peak kW	System Load Factor %	Minimum Month / Maximum Month
Anahim Lake	128	748,000	33	5,843	560	46.1	.6
Atlin	230	1,352,000	57	5,872	580	46.9	.47
Bamfield	115	1,061,000	33	9,226	696	52.0	.74
Bella Bella	288	3,372,000	45	11,708	1,850	46.7	.55
Bella Coola	606	6,447,000	58	10,638	2,500	50.7	.59
Dease Lake	113	956,000	34	8,460	660	48.5	.40
Eddontenajon	55	233,000	24	4,236	290	38.0	.45
Fort Nelson*	1,803	14,861,000	23	8,236	13,650	53.8	.46
Masset	800	9,247,000	50	11,559	3,700	56.6	.73
Sandspit	787	9,220,000	53	11,715	4,500	44.5	.64
Stewart	543	5,950,000	46	10,958	2,990	49.0	.47
Tatla Lake	64	353,000	35	5,515	260	41.7	.56
Telegraph Creek	58	422,000	45	7,276	280	41.4	.36
Zeballos*	107	1,243,000	62	11,617	696	32.9	.54

* Not a remote community; included for reference only.

** The residential energy relative to the total system energy provides an indication of the commercial/industrial component.

The commercial/industrial component of the community electrical demand ranges from 38 to 77 percent as indicated in Table 4.1. This component can be made up of stores, hotels, sawmills and any other nonresidential power use. The wide range can be explained by some large industrial customers in a few communities and by low per capita residential power use in others.

Regional residential heating load patterns are considerably more predictable than the electrical load patterns. Heating loads are dependent on the climate, the heating system, the housing quality, the degree of insulation and to some extent the preferences of the individual homeowner. Calculated heating loads for the communities served by BC Hydro, which are representative of many regions, were based upon the following formula, which includes effects of internal gains from appliances and occupants, solar energy gains and assumes a furnace seasonal efficiency of 65 percent. This provides a conservative estimate as furnaces other than gas are generally less efficient.

$$\text{Fuel Use} = -15 + DD\,(-.0101 + .0002\,(UA) - 1.053 \times 10^{-7}\,(UA)^2)$$

where: DD is the climate in Degree Days to base 18°C
UA is the heat loss coefficient of the building in Watts/°C

Type		Area (ft^2)	Insulation	UA=Heat Loss W/°C
Log House	1 Br	500	Log	315
Frame	2 Br	1,000	Uninsulated	475
			R7 walls, R12 attic, single glass	270
			R12 walls, R20 attic, double glass	180
Frame	3 Br	1,200	Uninsulated	580
			R7 walls, R12 attic single glass	340
			R12 walls, R20 attic, double glass	230
Mobile Home	2 Br	600	R7 walls, R12 ceiling single glass	180

Source: SAR Engineering and B C Hydro Energy Use Engineering.

The formula and values of UA have been used to calculate Table 4.2 for one house category and several insulation categories. Using Table 2 and its attached notes it is possible to estimate a heating cost for several fuels, fuel prices, insulation levels and types of house construction. These derived prices will always be subject to correction owing to consumer habits and other unforeseen variables, however, they give a clear example of the sensitivity of the cost of heating to the principle factors involved. The trends are shown graphically for one house type and price level on Figure 8.

4.3 ENERGY USE PATTERNS BY USER GROUP CATEGORIES

4.3.1 General

When energy use, particularly electrical energy, is analysed by user group categories rather than regions, a number of patterns emerge. In the study the designations included work camps (eg. forestry or highways, with a moderate industrial component), mines, which are like work camps with a large industrial component for milling or processing; native communities, which exhibit a wide range of residential power use; and mixed communities, which have a varied but permanent population along with commercial establishments and light industry.

4.3.2 Work Camps

Work camps exhibit a fairly consistent energy use pattern. Typically the camp consists of mobile homes or prefabricated bunkhouses, an office, kitchen/dining room and a maintenance shop. The power supply is most often diesel electric, with propane used for cooking and furnace oil used for heating. Depending on the age of the camp there are varying degrees of building insulation levels and heat control systems. Typically there is only one diesel generator operated at a time so the load on the generator (and hence the fuel use) will not always be at the most efficient point. The nature of these camps also requires a large fleet of vehicles (4 x 4 pickups and larger) so there is a large component of fuel used in the transportation sector. Residential energy use per resident ranges from 42 to 170 gigajoules per year, with most coastal camps using about 50 gigajoules per year.

TABLE 4.2 (Page 1 of 2)

REGIONAL RESIDENTIAL HEATING LOADS (Giga Joules/Year)

(Net Heat to the building)

Community	Degree Days (18°C)	Average House Category	Heat Required for Insulation Level #1	Heat Required for Insulation Level #2	Heat Required for Insulation Level #3
Anahim Lake	6290	2	237	138	82
Atlin	6733	2	253	147	89
Bamfield	3270	2	118	65	36
Bella Bella	3630 (E)	2	135	75	42
Bella Coola	3850	2	144	81	53
Dease Lake	7020	2	269	155	93
Eddontenajon	7020	2	269	155	93
Fort Nelson	7090	2	272	157	94
Masset	3790	2	140	79	46
Sandspit	3670	2	136	77	57
Stewart	4690	2	176	100	59
Tatla Lake	5980	2	228	130	77
Telegraph Creek	5810	2	221	127	75
Zeballos	3320 (E)	2	122	68	39

NOTES:

			Conversion Factor for Proportion of Heat Required (for each insulation level)		
House Category:	1 - Wood Frame	6 room	1.15	1.28	1.40
	2 - Wood Frame	5 room	1.00	1.00	1.00
	3 - Log	4 room	.67	1.18	2.05
	4 - Mobile 12' x 50' (Normal Insul.)		.33	.58	1.00

Insulation Level:

1. **None** - Walls, doors and windows are sound but no effort at insulation made.
2. **Minimal** - R 12 ceiling, R 7 walls
3. **Normal New** - R 28 ceiling, R 12 walls, double glazed windows

Note: R40 ceiling, R20 walls, air sealed, double glazed, North storm windows is the recommended new standard which would reduce heat required to 40 - 50 % of Insulation Level 3.

Temperature: It is assumed maximum interior temperature is 21°C.

TABLE 4.2 (Page 2 of 2)

	Oil	Natural Gas (for comparison only)	Grid Electricity	Propane	Wood	Diesel Electricity
Unit Prices of Fuel:						
(Typical for larger remote communities)	$.30/l	$.3858/unit	$.0358/kW.h	$.35/lb $.39/l	$60/cord	$.10/kW.h
Unit Prices of Energy (Typical for larger remote communities based on above fuel prices)	$7.70/GJ	$3.86/GJ	$11.01/GJ	$15.38/GJ	$3.34/GJ	27.80/GJ

Seasonal Furnace Efficiencies (Typical well maintained units)	Oil Furnace	55%
	Gas Furnace	65%
	Oil Space Heater	45%
	Air Tight Wood Heater	50%
	Electric Baseboard*	100%

***Efficiency is 30% if diesel is used to generate the electricity**

Annual Heat Cost = $\frac{\text{Energy Price}}{\text{Efficiency}}$ x Heating Load x Conversion Factor

Example: Oil Furnace heated, 3 BR house in Stewart, minimal insulation (fuel cost .37/l)

Annual Heat Cost $\frac{\$9.50/GJ}{.55}$ x 100 GJ x 1.28 = $2200/yr

These estimates are for comparison only. Actual numbers will vary with house type, location, consumer habits and furnace efficiency.

Mines are the largest per capita energy use group because a large component of energy (up to 90 percent) is utilized in the industrial process. Depending on the type of mine, energy may be used for milling, pumping, and drying as part of the industrial process. Often large 3 phase electric motors are used, requiring a reliable source of electric power. The power is usually supplied by diesel generators. Due to their large power use, mines utilize more heat recovery than any other sector, using waste heat for buildings adjacent to the power plant. Regarding domestic energy use, it is not always possible to estimate the domestic component as one shipment of fuel may be broken down into several allocations. However, the domestic energy use can be expected to be relatively high because there is a predominance of oil heat with company supplied fuel, and the mountainous location of most mines implies a higher heating requirement, compared with forestry operations which are generally coastal, and more seasonal in operation.

4.3.3 Native Communities

Native communities in British Columbia exhibit a wide range of energy patterns. For the purpose of this discussion, native communities which are only a small part of a mixed community are not considered. The communities include small settlements with no community power supply, communities with limited electrical supply, communities with full diesel electric supply, communities served by B C Hydro diesel systems and two communities served by their own small hydro power systems. Few generalizations can be made about the energy use pattern, except that there is a trend toward higher energy use per capita as the community size increases. This is explained by the fact that larger communities have a school, which is given the highest priority for energy use, and other community energy uses develop around the school generating system. Before long an expanded system is put in and houses are connected. The larger community also has a more advanced Band Administration and more opportunities to fund the operating expenses of a generating system. The larger communities are generally wealthier on a per capita basis which permits more income to be directed to purchase goods that require power, similar to the pattern observed in native communities served by B C Hydro. Another complication is the price structure

in each community. Various combinations of flat rates and per kilowatt hour rates are used, together with power restrictions in some communities. These factors all play a part in the magnitude of native community power use, and are illustrated by comparing community energy uses shown in Figure 5, Figure 6 and Figure 9.

4.3.4 Mixed Communities

Mixed communities also exhibit a varied energy use pattern. Most of the mixed communities are served by B C Hydro diesel plants and their energy use pattern has been discussed in Section 4.2. Other mixed communities consist of recreational and ranching areas, typically unorganized and often geographically spread out. Individuals must depend on their own systems for their heating and lighting requirements, sometimes using individual generators and sometimes doing without direct power. Wood, oil and propane are the most common heating fuels. Their costs are invariably high, due in part to the transportation component of fuel delivery and partly to the colder climates. They can also be faced with unpredictable costs if a generator breaks down. Their overall use of oil would tend to be relatively high, tempered only by the use of wood heaters and restricted use of generators. Summaries of household energy expenses are provided in Figure 5.

4.4 ENERGY USE PATTERNS WHERE SUBSIDIES ARE INVOLVED

Many of the remote communities in all categories have a subsidy attached to the energy they use. Examples include the B C Hydro diesel communities, which typically pay the provincial average of 3.7¢/kW.h for power even though the marginal cost of generation is in the order of 10¢/kW.h. Some native communities subsidize the power to individuals because costs can be made up from other sources, and company towns or camps sometimes provide free or subsidized power and energy to workers, depending on whether they live in bunkhouses or private quarters. Examples of the electrical and heating energy use at some remote communities are shown in Table 4.3.

TABLE 4.3

ENERGY USE COMPARISONS

Community	Actual Use of Electricity (Annual per Household)				Estimated Use of Heating Fuel (Annual, per Household)			
	Quantity kW.h/yr	Cost $	Subsidy[1] $	Total Cost $	Quantity Giga Joules/yr	Cost $	Subsidy[1] $	Total Cost $
Native								
Kitkatla	10,000	600	1,068	1,668	143	1,687	0	1,687
Klemtu	14,000	240	450	690	139	1,605	0	1,605
Hartley Bay	12,100	240	2,422	2,662	143	1,687	0	1,687
Hesquiaht[2]	6,000	0	1,020	1,020	120	1,268	0	1,268
B C Hydro								
Bella Bella	11,700	419	1,005	1,424	136	1,437	0	1,437
Stewart	10,960	392	998	1,390	181	1,680	0	1,680
Dease Lake	8,460	303	1,832	2,135	283	3,339	0	3,339
Bamfield	9,226	330	658	988	119	1,099	0	1,099
North Coast[3]	10,160	380	0	380	159	642	0	642
Camps								
Cassiar	12,000 (est)	370	1,320	1,680	290	1,500	1,500	3,000
Forest: Woss	9,000 (est)	0	1,260	1,260	128	1,182	0	1,182
Holberg (DND)	9,000 (est)	477	823	1,300	124	1,145	0	1,145

NOTE:

1. Subsidies are related to operating cost only, except at Klemtu where the small hydro system is considered to be financed at 10%.
2. Hesquiaht (Hot Springs Cove) is shown as an example of a Native Community where the power use is limited.
3. Average Energy Usage in B C Hydro Grid System and Gas System based on Vancouver Island electricity use and Terrace gas use.
4. The heat costs are shown for oil furnace heated standard 2 BR houses (insulation category 2) and show the range of costs possible for different climate and price zones. Actual costs will vary with degree of insulation, conservation, energy use patterns and the local price of fuel.

Despite the large subsidies involved in the energy supplies to consumers in some remote communities, it is difficult to draw a direct conclusion about the magnitude of additional energy use resulting from the subsidy. This is because most observed increases in energy use at subsidized remote communities could also be explained by other factors. The residential energy use at subsidized communities, with minor exceptions, varied little from provincial normals of energy use. It would be easier to prove that if the subsidy were removed, the energy consumption would decrease below normal because the cost to the consumer would be so much higher.

The only areas where increased energy use with a subsidy is detectable are the BC Hydro remote communities, where electricity use is about 10 percent more than the provincial grid average. This can be explained by increased use of electric hot water heat where natural gas is not available and a predominance of single family homes whereas metro areas on the electric grid have a high proportion of apartments which have lower energy use. Klemtu also has higher than normal electric energy use. However, the energy used is renewable (from a small hydro power plant) and the subsidy is essentially on the capital cost only.

4.5 PROVINCIAL AVERAGES OF ELECTRICAL ENERGY USE

Most of the population of British Columbia is served by the provincial electric grid, a large segment of which is served by natural gas distribution lines. These sources of energy usually represent the most economical option for heating and electrical supply. Figure 4 indicates the daily winter and summer pattern of residential energy use in these areas. The information available does not give a breakdown of area patterns, only the provincial average pattern and the average demand for the Fraser Valley-Metropolitan Vancouver, Central Interior (Prince George) Southern Interior (Okanagan) and Vancouver Island areas. It is assumed that the shape of the load pattern for various areas is the same and that it shifts up or down to match the average power use. The difference between winter and summer power use is nearly constant at about 0.2 - 0.3 kW until the dinner hour is reached. Winter exhibits a high 6 pm peak and a constant drop off through the evening, while summer exhibits a 5 pm dinner peak and a secondary peak around 10 pm.

There is insufficient information to provide direct load pattern comparisons with remote communities. However, the average loads can be compared as these are available for residences in the B C Hydro diesel areas and in many of the other remote communities. These remote community loads are summarized in Figure 6 and can be compared with the provincial averages in Table 4.4. A breakdown of the typical electrical demand pattern by end use is shown in Figure 7.

TABLE 4.4

PROVINCIAL AVERAGE USE OF ELECTRICITY PER DWELLING

(No space heat, some hot water heat)

Region	Annual Normal for On Grid Area (kW)	Annual (kW.h)	Representative Off Grid Areas
Metro Vancouver	1.02	8,930	N/A
Fraser Valley	1.08	9,460	N/A
Central Interior	0.96	8,400	Anahim Lake Cassiar Telegraph
Southern Interior	1.08	9,460	N/A
Vancouver Island	1.16	10,160	Bamfield Sandspit Klemtu Kitkatla

4.6 COMMUNITY ENERGY USE AND SUPPLY

The remote communities responding to the questionnaire were requested to provide information on community power generation, residential and commercial heating systems and transportation use of energy. Although few respondents were in a position to know precise details of commercial energy use (defined as commercial, community and industrial energy), sufficient information was available from a number of sources to estimate commercial use of energy given the number of buildings and total electricity generation. B C Hydro records of nonresidential energy use were useful to help define a ratio between commercial and residential energy use. As the residential electrical energy use was defined within relatively narrow ranges the balance of community energy could be attributed to commercial use. Once the ratio between commercial and residential electrical energy was defined, it was assumed that the heating component followed the same ratio.

The relationship between commercial, residential and transportation energy is shown in Figure 9. There was such a wide range in energy usages that a logarithmic scale had to be used which serves to compare communities. Exact values of the energy use are provided in Appendix 1.

Community energy supplies were derived from the questionnaire responses. Some respondents were able to provide direct quantities of fuel while others provided sufficient information (house type, insulation and fuel types) that estimates could be made using the heating equations given in Section 4.2. All forms of energy use including hydro generated electricity were converted to the equivalent amount of oil before burning (in gigajoules, where one gigajoule is equal to 25.9 litres of oil). This provided a uniform basis for comparing energy sources, as shown on Figure 10.

4.7 ENERGY CONSUMPTION TRENDS IN THE REMOTE COMMUNITIES

The discussion thus far shows that energy consumption in the remote communities is affected by a number of diverse factors. Some of the more important factors include community population, per capita income, climate, condition of the housing stock, fuel prices, general awareness of energy consumption, mix of industrial and residential consumption, and the like. Over time, all of these factors will change thereby affecting community energy consumption patterns. The survey level of the study precludes an in-depth examination and forecast of the likely future values of these factors. Rather, what is attempted here is a sketch of future trends in community energy consumption based on data collected by the questionnaire and through direct contacts.

For the most part, it was assumed that increasing levels of economic activity and population increases are positively related to energy consumption. Similarly, declining economic activity and population lower total consumption. If little change is expected in these two principal factors, then energy consumption was assumed to remain constant. Unless otherwise constrained by specific data to the contrary (eg scheduled closing of an industrial site), community energy consumption profiles have been projected over a twenty year period. This forecast period was chosen in order to be consistent with the economic analysis. However, it must be recognized that the simplified forecasting methodology used here is more appropriate for the short term and may well significantly under estimate or over estimate actual future energy consumption.

The electricity requirement in the 12 diesel generating areas served by B C Hydro were considered in Table 4.5. The projections through the year 1988 were drawn from the latest medium term forecast by B C Hydro. Over this 6 year period electricity requirements were projected to grow at an average annual rate of 3.9 percent for all areas. The greatest average annual growth was forecast for Dease Lake, at 9 percent per annum. The lowest growth is

TABLE 4.5

PROJECTIONS OF GROSS ELECTRIC POWER REQUIREMENTS (GWH/YR)
(Based on Normal Winter Temperatures, Includes All Losses)

Community	1982 Actual 1982	83	84	85	86	87	88[1]	89[2]	90	91	92	93	94	95	96	97	98	99	00	01	02
Anahim Lake	2.26	2.40	2.45	2.50	2.60	2.75	2.90	2.95	3.00	3.08	3.14	3.20	3.27	3.33	3.40	3.97	3.54	3.61	3.68	3.75	3.83
Atlin	2.38	2.60	2.70	3.00	3.20	3.40	3.70	3.77	3.85	3.93	4.00	4.09	4.17	4.25	4.39	4.42	4.51	4.60	4.69	4.79	4.88
Bamfield	3.17	3.20	3.25	3.30	3.35	3.40	3.50	3.57	3.69	3.71	3.79	3.86	3.94	4.02	4.10	4.18	4.27	4.35	4.44	4.53	4.62
Bella Bella	7.6	8.39	8.54	8.79	9.04	9.33	9.57	9.78	9.94	10.15	10.35	10.56	10.76	11.00	11.22	11.42	11.66	11.91	12.16	12.37	12.61
Bella Coola	11.11	11.4	11.7	12.10	12.50	12.8	13.4	13.67	13.94	14.22	14.50	14.79	15.09	15.39	15.70	16.01	16.33	16.66	16.99	17.33	17.68
Dease Lake	2.80	3.25	3.60	3.95	4.30	4.45	4.70	4.79	4.89	4.99	5.09	5.19	5.29	5.4	5.51	5.62	5.73	5.84	5.96	6.08	6.20
Eddontenajon	.97	1.05	1.05	1.10	1.15	1 20	1.30	1.33	1.35	1.38	1.41	1.44	1.46	1.49	1.52	1.55	1.58	1.62	1.65	1.68	1.72
Masset	18.36	19.10	19.45	20.5	21.5	21.9	23.0	23.46	23.93	24.41	24.90	25.39	25.90	26.42	26.95	27.49	28.04	28.6	29.17	29.75	30.35
Sandspit	17.56	18.5	18.95	19.50	20 0	20.4	21.2	21.6	22.06	22.5	22.95	23.41	23.87	24.35	24.84	25.34	25.84	26.36	26.89	27.42	27.97
Stewart	2.99	3.16	3.31	3.42	3.53	3.63	3.74	3.81	3.89	3.97	4.05	4.13	4.21	4.30	4.38	4.47	4.56	4.65	4.74	4.84	4.93
Tatla Lake	.95	1.00	1.00	1.04	1 10	1.15	1.20	1.22	1.25	1.27	1.30	1.32	1.35	1 38	1.41	1.43	1.46	1.49	1.52	1.55	1.58
Telegraph Ck	1.02	1.05	1.10	1.15	1.20	1.25	1.30	1.33	1.35	1.38	1.41	1.44	1.46	1.49	1.52	1.55	1.58	1.62	1.65	1.68	1.72

[1]For years 1982/1988, forecast taken from B C Hydro, "Projections of Gross Load Requirements", September 1982, Table 7-2, converted to calendar years.

[2]After 1988, annual growth for all communities taken to be 2 %/year.

expected in Bamfield at 1.7 percent per year. After 1988, a constant average annual growth rate for all communities of 2 percent per year was assumed. This is a simplifying assumption and one that likely understates what may be the actual growth realized in a number of these communities.

These electricity requirements are projected to be met by diesel generation over the forecast period. Implicitly, it is assumed that none of these communities will be connected to the integrated grid. Given these conditions, diesel fuel will continue to be needed to meet electric requirements. In Section 5, alternative means for reducing electricity demands by various conservation measures are considered. In Section 6, alternative energy sources that might supplement diesel generation are reviewed. Under either strategy, diesel fuel savings might be realized. In Section 7, the social value of the fuel savings are estimated given the volume of diesel displaced, and social cost of the diesel developed in this section.

Forecasting energy consumption in the remaining remote communities is unreliable due to the shortage of information. According to the data collected by the questionnaire and by direct contacts, the population of many of the remote communities is stable or increasing. There are several exceptions, which include the Indian villages of Nuchatlaht, Kyuquot, Portage, Owikeno, and Gilford (Table 4.6). These communities are expected to be reduced in size because of a shortage of amenities causing the population to move away. The population of Cassiar is expected to decline over the next ten years as the mining operation is reduced, while logging camps generally have a 10 - 20 year lifespan. Most of the remaining communities have a stable or slowly growing population and total energy demand can be expected to follow the population trend. In cases where energy becomes more available at reasonable cost, demands will invariably increase. Industrial development which may not be foreseen at the present time will also add significiantly to energy demand. Unless steps are taken in these communities to conserve energy or use renewable energy, they will become even more dependent on oil products. Anticipated growth potential as indicated by questionnaire responses are shown on Table 4.6. Communities which were thought to be remote, but which were disqualified by at least one of the program criteria are shown in Table 4.7.

TABLE 4.6

GROWTH POTENTIAL OF REMOTE COMMUNITIES

No	Location	Growth Potential					
		Stable	Increasing	Decreasing	Closing	Possible Grid Connection	Other
1.	Masset	X					
2.	Bella Coola	X					
3.	Sandspit	X					
4.	Cassiar			X	10 Yrs		
5.	Stewart	X					
6.	Bella Bella		X				
7.	Holberg DND	X					
8.	Lasqueti Island		X				
9.	Woss	X					
10.	Holberg	X					
11.	Atlin	X					
12.	Dome Creek		X				
13.	Kitkatla		X				
14.	Dease Lake		X				
15.	Anahim Lake	X					
16.	Telegraph Creek	X					
17.	Klemtu		X				
18.	Kyuquot			X			
19.	Field	X					
20.	Vernon	X					

TABLE 4.6

GROWTH POTENTIAL OF REMOTE COMMUNITIES (Page 2 of 5)

No	Location	Growth Potential: Stable	Increasing	Decreasing	Closing	Possible Grid Connection	Other
21.	Bamfield	X					
22.	Iskut/Eddontenajon	X					
23.	Seymour Arm		X				
24.	Hartley Bay		X				
25.	Takla		X				
26.	Mahatta River	X					
27.	Sewell Inlet	X					
28.	Nemaiah Valley		X				
29.	Fort Babine IR #6		X				
30.	Big Bar/Jesmond		X				
31.	Kingcome		X				
32.	Fort Ware	X					
33.	Erickson Gold Mine	X					
34.	Tide Lake	N/A					
35.	Lower Post	X					
36.	Manning Park	X				X	
37.	Nazko Indian Band	X				X	
38.	Juskatla	X					
39.	Portage (Nancut)			X			
40.	Hesquiaht		X				

TABLE 4.6

GROWTH POTENTIAL OF REMOTE COMMUNITIES

No	Location	Growth Potential					
		Stable	Increasing	Decreasing	Closing	Possible Grid Connection	Other
41.	Nitinaht		X				
42.	Toad River Area		X				
43.	Scotty Gold	X					
44.	Prophet River		X				
45.	Germansen Landing	N/A					
46.	Penny	N/A					
47.	Moses Inlet	X					
48.	Gilford Island			X			
49.	Stave Lake	X					
50.	Longworth	N/A					
51.	Trout Lake	X					
52.	Eastgate		X				
53.	Narrows Inlet	X					
54.	Pitt Lake	X					
55.	Machmell	X					
56.	Acteon Sound	X					
57.	Timfor	X					
58.	Wakeman Sound	X					
59.	Knight Inlet	X					
60.	Tom Brown Lake	X					

TABLE 4.6

GROWTH POTENTIAL OF REMOTE COMMUNITIES

No	Location	Growth Potential					
		Stable	Increasing	Decreasing	Closing	Possible Grid Connection	Other
61.	Phillips Arm	X					
62.	Quatam River	X					
63.	Sechell Creek	X					
64.	Port Douglas	X					
65.	Mooya Bay (Nootka)	X					
66.	Barclay Div	X					
67.	Owikeno			X			
68.	Boulder Bay	X					
69.	Scott Cove	X					
70.	Seymour Inlet	X					
71.	Cleagh Creek	X					
72.	Kingcome Inlet	X					
73.	Drury Inlet	X					
74.	Greenwood Camp	X					
75.	Kilbella Bay	X					
76.	Nuchatlaht			X			
77.	Nicknaqueet	X					
78.	Shotbolt	X					
79.	Tatla Lake		X				
80.	Sheemahant	X					

TABLE 4.6

GROWTH POTENTIAL OF REMOTE COMMUNITIES

No	Location	Growth Potential					
		Stable	Increasing	Decreasing	Closing	Possible Grid Connection	Other
81.	Simoon Sound		X				
82.	Savary Island	N/A					
83.	Baker Mine Camp	X					
84.	Western Mines		X				
85.	Hornet	X					
86.	Christian Valley		X				
87.	Barr Creek	X					
88.	Earls Creek	X					
89.	McNab Camp	X					
90.	Meziadin Lake	X					
91.	Bob Quinn Lake	X					
92.	Good Hope Lake	X					

NOTE: N/A indicates not available

TABLE 4.7

LIST OF COMMUNITIES DISQUALIFIED FROM PROGRAM (FORMERLY DESIGNATED AS REMOTE)

LOCATION	BACKGROUND
Carolin Gold Mine	Work force commutes to Hope, diesel generators used for industrial uses.
Tasu Iron Mine	Closing in one year.
Narnu	Closing in one year.
Mosquito Creek Mine	Work force commutes to Wells, diesel generators used for industrial uses only.
Silvana Mine	Work force commutes to New Denver, diesel generators used for industrial uses only.
Fort Nelson	Natural gas available.
Zeballos	Grid extension planned.
McBride	Grid extension 1982.
Port Renfrew	Served by the grid
Wonowon	"
Rioke Creek	"
Alexis Creek	"
Chilanko	"
Redstone	"
Tete Jaune Cache	"
Danskin	"
Grassy Plains	"
Takysie Lake	"
Ootsa	"
Ahousat	"
Kincolith	"
Colleymount	"
Bear Lake	(Reference in TRU Report in error)
Glendale Cove	"
Winter Harbour	Native community relocated to Quatsino (on grid)
Chezacut	Spread out ranching community
Newgate	Spread out ranching community

The total population represented by these areas amounts to about 16,000, based on estimates by TRU (1980).

5. ENERGY MANAGEMENT AND CONSERVATION

5.1 MANAGEMENT OPTIONS

5.1.1 General

Energy management in this study is defined as the use and control of energy consuming devices to optimize their output and to reduce the overall consumption of energy. It involves being aware of the amounts of energy various devices consume and being aware of what constitutes wasteful energy use practices.

In the questionnaire response, there was little site specific information available on current energy management practices. Some larger companies had active energy management programs but most groups were not aware that cost effective improvements could be made to their systems. As the discussions below indicate, energy management can take a variety of forms and detailed comment must await the results of research into practices at individual locations. Most of these communities are not presently able to monitor energy use other than at the point of electrical generation, so they find it difficult to optimize energy use at the load centres. An estimate of the energy management potential in each community is presented in Figure 11.

5.1.2 Residential Sector

Management of energy in the residential sector is generally at the discretion of the occupant. His choice of temperature and thermostat setpoint, water heater setpoint, whether the heat is on while windows and doors are open for ventilation, how conscientious occupants are at turning out lights or setting the thermostat lower at night or when the house is unoccupied are typical practices which directly influence energy use. Identical houses and family size have shown energy variations by a factor of two and more for space and water heat.

Potential energy savings available through improved awareness, education and attention typically range from 20 percent to 60 percent: 20 percent of "average" use, 60 percent or more savings for the least careful occupants.

Technical management options include combustion heating equipment or furnace servicing, cleaning refrigerator or freezer coils, cleaning lights and light fixtures and adjusting thermostats for accuracy for space and water heat. Insulation of the home, water tanks, and hot water piping are dealt with separately.

5.1.3 Commercial and Industrial Sector (including Community Buildings)

Awareness of energy use in the commercial and industrial sector provides the greatest potential for achieving substantial energy savings. Energy saving concepts are similar to the residential sector, while equipment size, power requirements, heat and cold outputs, and electrical use are scaled up.

Equipment can be sequenced where several units provide full capacity - unused units can frequently be shut down entirely for weeks or months during the year to reduce standby losses. Refrigeration and power equipment can be scheduled to minimize the electrical demand. Heating and cooling equipment should be set to operate independently if possible, not simultaneously. Outdoor air can often be used to provide cooling or drying.

Generally, commercial and industrial operations can reduce energy use by 10 percent with little capital outlay, and 25 percent with a 3 to 5 year payback.

Electrical energy can be saved by scheduling equipment use to reduce the peak electrical demand. Lighting can often be controlled to fully utilize natural light, particularly where the lights are adjacent to windows or skylights. Automatic control of lighting is desirable, however considerable savings are possible with manual control. Night-time lighting can frequently be substantially reduced; photocells can adjust for day length changes and light requirements during the year.

5.1.4 Electrical Generation

In communities with a central generator, energy and generator management can result in savings. Either loads can be managed to keep a generator operating at its optimal efficiency or generator sizes can be sequenced to the load. Where there is base energy available from a renewable system the combination of diesel and renewable energy should be optimized.

In areas where electricity is generated from diesel fuel, electrical space and water heating systems are not appropriate and their use should be discouraged. It is more cost effective to use a direct oil fired system in the home than use the electric heat derived from diesel generation, although subsidized energy prices sometimes allow the consumer a lower cost to use electrical heating devices.

The potential savings of fuel for electrical generation is in the range of 10 percent for management systems to more than 80 percent, with displacement of electric space and water heat, and the use of renewable energy base-load units. Locations with planned new facilities or expansions can significantly benefit from energy systems planning. Potential energy savings depend on the existing degree of good energy management practice and the site specific conditions.

5.1.5 District Heating

District heating systems alone or in conjunction with generation heat recovery have been evaluated overseas and adopted in Sweden and Denmark. Heat recovery is also being utilized at some mining and forestry operations, where a building is located adjacent to the generating station. Up to 40 percent of the input diesel energy can be recovered and utilized as space heat. This option should be considered if there is no other means of replacing diesel generated electricity.

5.2 ENERGY CONSERVATION OPTIONS

5.2.1 General

Energy conservation is defined as any of a wide variety of measures which reduce the total need for energy while maintaining acceptable standards for residential comfort and industrial production. The principal applications for energy conservation involve the use of energy for heating purposes and for electrical generation. Questionnaire responses could not be expected to provide the degree of detail necessary to fully evaluate the state of energy conservation in a community, but the following sections serve as a checklist of the numerous options available. In Figure 11, the potential energy savings through residential insulation are shown.

5.2.2 Heating Energy Conservation

The following energy conservation measures are applicable to remote community energy use, both residential and commercial. Communities can use these measures to evaluate the status of their own systems.

Space Heat

Space heat is defined as energy used to achieve a building temperature of as much as 30°C. Measures for conserving space heat include:

- insulation upgrading consisting of improvements to the foundation, crawl spaces, basement, floor, walls, ceiling and attic;
- window upgrading consisting of adding storm windows or replacement windows (double or triple glazed);
- air leakage reduction consisting of caulking, weatherstripping, sealing, adding polyethylene air/vapour barrier (where possible), adjusting doors and windows;
- equipment upgrading such as furnace heater or boiler servicing, balancing, filter cleaning, heat exchanger surface cleaning, downsizing or de-rating burner or combustion capability and ensuring controls are accurate, operational, and flexible.

The savings potential for these measures can be from 20 - 70 percent depending on the existing condition of the buildings.

Optimum Insulation Levels

An "optimum" insulation or R-value concept can be applied to building insulation, to minimize the building insulation and fuel cost. This would be done for typically a 10 or 20 year period, using the following formula:

$$R_{opt} = \frac{\text{annual climate factor per unit area x fuel cost x present worth factor}}{\text{seasonal combustion efficiency x incremental insulation cost}}$$

where: annual climate factor (for simplicity) can be estimated from

- 24 DD (degree days x 24 hours)
- fuel cost, present oil or electricity price or generation cost
- present worth factor, fuel escalating at 2% real per year has pwf of 12 over 10 years, 25 over 20 years
- seasonal combustion efficiency, assumed 0.65 (conservative)
- incremental insulation cost, typically
  attics - 2¢ to 3¢/R per ft^2
  (wall values can be similarly derived)
- Area of house = 1000 ft^2

This equation numerically becomes:

$$R_{opt} = \frac{6.3 \times DD^{\circ}c \times \$\text{fuel per GJ} \times \text{pwf}}{1000 \times ¢/R \text{ per } ft^2}$$

Note: 6.3 is a conversion factor to account for the mixed units.

For Atlin, British Columbia, for oil heat at $8.87/GJ, attic insulation at 3¢/R per ft^2, and for electricity generated from oil:

Fuel	Cost	DD	Cost per R	Time Period (Years)	R_{opt}
Oil	$8.87/GJ	6733	3¢/ft^2	10	35
				20	50
Electricity	$29.56/GJ	6733	3¢/ft^2	10	61
				20	70

Therefore from a 10 year perspective, Atlin homeowners with oil heat should consider R35 attics (RSI 6.2) as worthwhile. From the utility perspective, any homes on electric space heat, based on a 20 year assessment, should have attics insulated to R70 (RSI 12.3).

The above insulation values indicate that a comprehensive review of buildings is worthwhile, especially in colder climates, where most buildings presently have substantially less than optimum insulation. This is even more important for homes on electric space heat. Higher levels of thermal efficiency may be achievable at a feasible cost as double wall and strap-wall building techniques become more widely understood and adapted.

Water Heat

Water heat is defined as energy used to produce hot water at a temperature not exceeding 60°C. Measurements for conserving water heat include:

- insulation of the tank and piping;
- servicing of the water system by draining water off the tank bottom to clean sediment, tuning burners, installing a vent damper for combustion heaters, removing one electric element or de-rating upper heating element;
- setting up for off peak power use if electric and if community load shedding is desirable, reducing flows and system pressure, using auto-shut off in commercial or public systems and reducing the thermostat to a comfortable level.

The savings potential for these measures can be from 10 - 30 percent depending on the design and condition of the existing system.

Process Water and Steam Heat

Process water and steam heat systems are found in non-residential applications. Process water temperatures range up to 100°C while steam temperatures may reach 250°C. Energy conservation measures include:

- insulation upgrading to the economic optimum insulation on boilers, heaters, vats, tanks and pipes;
- servicing of components involving combustion checks, tune ups, cleaning, downsizing, maintenance on steam traps and valves, returning condensate to boilers and adding chemical treatment for boiler water.

The savings potential of these actions can be from 7 - 40 percent.

Other Heat

Other heating systems, such as those found at laundries, laundromats, bakeries, and indoor swimming pools can benefit from air and water heat recovery systems with a savings potential of from 10 - 60 percent.

5.2.3 Electrical Energy Conservation

Electrical energy conservation involves the optimal use of energy in the electrical systems discussed below. Where electrical energy is used for space or water heat the techniques of Section 5.2.2 would apply.

Lighting

Lighting energy can be conserved by reducing the need for lights and by using more efficient lighting systems. The methods include:

- installing additional switches to enable lights near windows and skylights to be turned off on bright days;
- reducing "over-lighting" by delamping;
- installing higher efficiency lights, electronic ballast, "watt-saver" fluorescent tubes;

- painting interiors light colours to reduce need for lights.

The savings potential of these measures is about 5 - 30 percent.

Refrigeration

Refrigeration systems typically consist of a compressor, distribution system and enclosure. Methods of conserving energy at these facilities include:

- reinsulating building enclosures at facilities such as ice rinks, cold storage coolers and ice plants;
- installing dehumidification equipment to reduce refrigeration loads;
- using off-peak power to enable over-cooling when low electrical demands occur (this benefits the overall electrical system);
- using waste heat from refrigeration condensers for space heat at adjacent buildings.

The savings potential of these measures can be from 5 - 20 percent.

Mechanical

Mechanical systems consist of rotating, reciprocating or other machinery whose primary objective is to produce motion or force. In some cases energy savings are possible with the use of:

- direct drive systems from a prime mover to the mechanical device rather than through a generator and motor;
- heat recovery from drive unit prime movers;
- high efficiency motors and pump efficiency optimization;
- power factor correction.

The savings potential is in the order of 5 - 15 percent.

Electrical Generation

As described in Section 5.1.5, heat recovery from electrical generation improves the overall efficiency. Where a heating requirement exists, waste heat from cooling water jackets and exhaust heat can be used resulting in a saving of about 40 percent of the input energy.

6. ALTERNATIVE ENERGY SOURCES

6.1 GENERAL

Although most remote communities are located in an area where there is some form of renewable energy available, that energy source is usually diffused and requires technically sophisticated and physically large devices to deliver the energy in a usable form. Such is the case with wind, solar and tidal power sources. Other energy sources, such as small hydro power and geothermal, can use physically smaller equipment, but their development depends on certain physical conditions being optimal, combined with a proximity to the load centre.

Development of the alternative energy sources that require relatively large capital outlays generally exhibits economies of scale, but such schemes must also be sized according to the characteristics of the energy source, the energy demand and the available technology. Important aspects relating to the provincial distribution, technology and development potential of the various alternative energy sources are discussed in the following sections. Estimates of the energy savings possible in each community are shown in Figure 11.

6.2 SMALL HYDRO POWER

6.2.1 Distribution of Small Hydro Power Sites

The distribution of small hydro sites throughout British Columbia is not uniform, as the largest number of sites is concentrated in mountainous areas with high precipitation. A recent study completed for the British Columbia Ministry of Energy, Mines and Petroleum Resources (Sigma, 1983) determined the distribution and capacity of small hydro power sites over 100 kW in areas served by B C Hydro (grid and diesel) and West Kootenay Power and Light (grid). It was found that the most numerous sites were in the northern Kootenays, South Coast and North Vancouver Island areas. Most major river

valleys had some small hydro potential in their tributaries. In general, areas without major rivers, with low relief and with extremely cold winters are poor prospects for small hydro development.

The above study was limited by the available mapping and the scope did not allow every area of the province to be checked, hence the lack of information about any particular community may not mean it has no potential. A map check supplemented by local knowledge is usually warranted. In this study, an estimate was made of the small hydro power potential for communities not previously examined and with a population of 50 or more. Communities of less than 50 people were provided with estimates of power available based on load requirement, hydrology and geographic location as indicated on Figure 11.

6.2.2 Technology of Small Hydro Power

Small hydro power is one of the most proven alternative energy technologies. Systems have been in use in British Columbia since the late 1800's. Some of the more recent advances in turbine designs date from the 1920's, although refinements are always being made to materials and components. Other aspects of small hydro power systems, especially systems dealing with electronics, have made great advances in recent years. New governing and control systems will benefit small hydro systems and remote communities as they are generally suited to small systems which require remote or automatic control.

Other components of the small hydro system have shown advances with improved materials, especially penstocks, which can now be built without the traditional steel or wood. Various types of plastic pipe are well suited to small hydro power systems. Intakes can also be improved with automatic control and cleaning devices.

One of the important advantages of a small hydro power system is that once a site is selected, the uncertainty in the system capability is limited. The technology is advanced such that an installation can be made successfully with

a high degree of confidence. The hydrology of the stream can be closely estimated from regional or site specific records and the power consumption of the system can be estimated from experience with similar locations. Some additional considerations in developing a viable small hydro power system are shown in the following sections.

6.2.3 Development Criteria for Small Hydro Power

Development of small hydro power installations is dependent on many criteria, all of which vary between sites. The criteria can be subdivided into those which affect the initial cost and those which affect the rate of payback. Similar evaluation criteria can be used for all forms of renewable energy and conservation.

The initial cost is affected by the installed capacity, the steepness of the penstock, the head, the accessibility of the site, the degree of sophistication incorporated into the design and environmental mitigation as detailed below:

- the installed capacity must be selected to provide sufficient capacity for the demand on the system and allow for potential load growth. Alternatively a supplemental power supply can be used to provide peaking power or a load management system can be used to reduce peak loads. The installed capacity must also be compatible with the hydrology of the site;

- the steepness of the penstock determines much of the cost of the installation, as the penstock typically makes up the largest cost component of the project. In order to be cost effective against diesel power, the penstock slope should be greater than 5 - 10 percent, the exact limit depending on the overall size of the installation. The presence of a suitable existing dam will often be favourable to a cost effective installation;

- the head on the turbine is related to penstock steepness and influences the overall system cost, as small hydro system costs are lower with a higher head. This is because the components are physically smaller for the same power output;

- the accessibility of the site affects costs insofar as the contractor must allow additional money for construction if either the location is remote or there is no road access to the intake, penstock and powerhouse;

- sophistication of the design affects the costs, with simpler systems being preferable. However, certain locations, if they are relatively inaccessible from the load centre, may require electronic protection and monitoring systems if it is difficult for the plant operator to be in regular attendance.

- environmental effects must also be considered and some expense may be required to mitigate the usually low impacts of a project.

The rate of payback is affected by factors internal and external to the small hydro system. These include capacity factors, hydrology, interest rates, inflation rates, fuel prices, maintenance shutdowns and cost of a backup system. These factors, some of which are applicable to all forms of renewable energy, are discussed below:

- the capacity factor on the small hydro plant (ratio of average power to installed capacity) should be kept as high as possible in order to maximize the revenue. Once a system is installed it costs very little to generate additional power within the limits of the installed capacity. This consideration applies to any system where excess energy cannot be stored;

- hydrology is important to the plant operation, especially if it is a run of river plant and if the plant has a capacity greater than the minimum stream flow. The power available in the stream on a daily basis must be matched against the daily system demands to estimate the energy potential of the plant;

- interest rates will always be critical to the viability of the project because small hydro plants are typically financed over long terms and the annual cost of power production is strongly influenced by interest rates (especially at higher interest rates);

- the small hydro system is relatively inflation proof because the annual cost of the project, and hence the cost of the energy output, is dominated by the amortized capital cost component. Therefore if there is a general price rise, the cost of energy from the small hydro project will tend to be more favourable relative to the cost of other energy sources;

- maintenance shutdowns must be allowed for in the total revenue projection. Not only is reliable machinery important, but the project location must consider the natural hazards of the area and design for them, or allow for them in the revenue projection;

- a backup system must be considered if there is insufficient capacity to meet foreseeable power shortages. The cost of the backup should be included in system costs; alternatively a lower degree of reliability may be accepted;

- taxation levels relating to both the power produced (eg school tax) and to the capital cost (eg capital cost allowance write off) must be considered in the analysis of expenses.

6.3 SOLAR ENERGY

6.3.1 Solar Energy Distribution

For a load such as water heating, which is relatively constant throughout the year, the maximum availability of solar energy on an optimum sloping surface is relatively constant from north to south and east to west across British Columbia. The exceptions are the west coast, Queen Charlottes and Prince Rupert locations which have 15 - 20 percent less solar energy than do other locations. The range is from a daily average over the year of 12MJ/m^2 to 15 MJ/m^2 on transects from Vancouver to Trail to Fort St John and from Fort Nelson to Smithers.

For space heating, it is not likely that a substantial change of existing dwellings is likely to occur for conversion to passive solar space heat. An attached solar

greenhouse will contribute significantly to household heating needs, provided the house has first been well insulated, in mild climates to R12 walls and R40 attics, in colder climates to R20 walls (or more) and R60 attics. Steeply sloped surface radiation for passive space heating (vertical surface radiation) does vary from south to north in B C due to latitude and the sun's altitude above the horizon in winter.

6.3.2 Technology and Applications of Solar Energy Systems

Solar energy systems are used for both heat and electricity; low temperature heat for heating homes, medium temperature heat for hot water systems and photovoltaic solar cells for direct conversion of sunlight to D C electricity. In British Columbia, solar heating systems have been used since 1970 to provide space heat and hot water; elsewhere in North America, systems for hot water date to the early 1900s, and passive space heating systems to Native American cultures.

For low temperature heat, such as building space heat, direct use of the sun is the most cost-effective application. Standard building materials are used to capture and store heat. Building designs need to be modified to minimize heat loss and optimize south-facing glass areas. Solar fractions of 30 - 55 percent for passive space heating were identified for British Columbia (Acres and Solar Applications and Research, 1980). Incremental building costs range from 0 - 10 percent additional for low energy passive solar designs.

Solar water heating systems for residential and commercial applications typically consist of roof-mounted flat-plate collectors to capture the heat, a pump and piping to move the hot water inside the building and an additional hot water storage tank to store the solar heated water until time of use. The second tank is frequently placed between the cold water supply line and the existing water heater to preheat hot water.

Installed systems, which supply about 50 percent of the household hot water need, cost $3,000 to $4,000 per household in Vancouver. These systems are not yet

mass-produced; and installation is labour intensive. As markets expand, costs can be expected to stabilize with respect to inflation. As an alternative to an installed system, components can be purchased and installed by the homeowner with little technical assistance. The estimated fuel saving is 5.2 GJ per year per house as indicated in Figure 11.

Over 50 workshops have been held throughout British Columbia and Alberta where participants build and operate a thermosyphon (non-pump) water heating system in a weekend workshop.

Communities with high unemployment would be candidates for a solar hot water program.

6.4 WIND ENERGY

6.4.1 Wind Energy Distribution

Many coastal locations of British Columbia show a good wind energy potential. Over thirty sites from southern to northern British Columbia have mean annual wind speeds of over 16km/h. Five coastal locations show mean annual wind speeds over 24km/h. Three interior locations have mean annual wind speeds over 16km/h (two on mountains plus Fort St John).

However, the use of wind speeds is misleading in that wind speed does not indicate the available wind resource when the energy is most required. For irrigation purposes many valleys in British Columbia have wind flows well matched to irrigation needs; for space heating and lighting, coastal communities have the greatest energy need when the winds are strongest, and when conventional fuel consumption is highest.

Examination of wind speeds in 100 locations in British Columbia shows that in December and January there are 36 stations with mean monthly wind speeds exceeding 16 km/h. Fifteen sites have monthly mean wind speeds over 24km/h,

while 4 have mean monthly wind speeds over 32km/h. The following chart indicates the mean wind speed at a number of stations based upon the observation period.

Number of Stations with Indicated Mean Wind Speed (based on time of year)

Wind Speed	Mean Annual	December and January Mean Monthly
over 16 km/h	30	36
over 24 km/h	5	15
over 32 km/h	NIL	4

Therefore, monthly mean wind speeds during winter are a better indication of the useful energy resource available to displace winter energy use: mean annual wind speed is a term which does not accurately reflect the resource available or the use to which it can be put.

An even better assessment of the resource is to draw monthly wind speed/duration curves which indicate the percentage of time that the wind exceeds various speeds. From this, the amount of energy available (up to the machine capacity) can be calculated, in terms of the percentage of time that adequate energy is available as well as the fraction of energy produced relative to the machine capacity. In order to produce the information, continuous wind velocity recordings over the period of at least a year are required. In this study seven locations were identified which are believed to have sufficient wind speed to justify an installation as indicated on Figure 11.

6.4.2 Technology of Wind Energy Systems

Wind energy systems, like small hydro power, are a proven renewable energy technology which have a long history in Europe and the Middle East for pumping water and providing mechanical and milling power. In British Columbia, widespread use of water pumping windmills declined with rural electrification, however, hundreds of machines, used and unused, can be seen in the province.

Electrical generation wind turbines were historically less widespread and more costly, hence few machines of the 1940s and 1950s survive today. Jacobs in the United States and Dunite from Australia are two manufacturers of wind electric generators in the 2 - 5 kW size - sufficient for rural farm use where grid connections are not available and electrical demands are modest.

Modern technology has increased the size of wind turbines (up to 4000 kW) for a single machine. Boeing and Hamilton-Standard (division of United Technologies) have demonstration projects in Washington and Wyoming. Vertical axis (eggbeater) wind turbines up to 500 kW have been develped by Alcoa, Sandia Laboratories, DAF Indal - NRC, and FloWind Industries.

Cost of equipment for 100 kW vertical axis machines is approximately $2,000 per kW, plus an estimated installation cost of $40/kW. Smaller machines cost $2,500 to $3,000 per kW of capacity. Capacity is usually rated at wind speeds of from 32 - 64 km/h; the higher the rated output speed, the less likely a system is to be economic under the average wind conditions.

6.4.3 Applications and Development Criteria

A promising site for a wind generator installation is near the Kitkatla Indian Reserve on Dolphin Island about 30 miles south of Prince Rupert.

Consider the development at this location, of a 100 kW vertical axis wind turbine utilizing the mean annual wind speed of 16 mph (26 km/h). Then the annual output would be about 300,000 kW.h based on a capacity factor of 0.45, and the calculated energy cost ranges from 11 - 14¢ per kW.h. The annual output is sensitive to wind speed, indicating a need for careful site selection and a wind speed measurement program.

If wind generators were installed by developers at such locations with relatively high mean annual wind speeds, the effects of more rapid depreciation allowances and special tax benefits may be shown to provide a profitable investment.

6.5 BIOMASS (WOOD PRODUCTS)

6.5.1 Distribution of Wood

British Columbia has extensive timber resources and most remote communities are located near stands of timber. The main problem with wood is that sufficient quantities are not usually concentrated in one place, but rather it is spread uniformly over the landscape. In this discussion wood is examined as a heating fuel and as a potential fuel source for electrical generation.

As a heating fuel, wood availability is demonstrated by its frequent use in the remote communities. However, in a few areas where wood supplies are scarce and where company towns provide fuel to employees, its use is limited. Use is especially limited in larger buildings or offices where the maintenance of the wood heating would detract too much from the business at hand. The cost of wood also influences the decision to use it. Where an individual's lifestyle permits time for wood gathering it becomes a very inexpensive fuel with a low cash value attached to it. However, if wood must be purchased and time is charged for maintaining the fuel system, it becomes less attractive.

Wood is also under consideration as a fuel for power generation systems and automatic furnaces in larger buildings. The wood to be used is waste wood or wood unusable for lumber operations. The problem of manageability is overcome by mechanically chipping the wood so that it can be handled by the furnace feeder. However, costs will be associated with collecting the wood as it is spread thinly after logging operations. The best source of concentrated wood waste is adjacent to a sawmill; however, there are few sizable mills near the remote communities in British Columbia. The energy profile in Figure 11 indicates communities which could expand their use of wood for residential space heating.

6.5.2 Wood Fuel Technology

Wood has traditionally been used as a heating fuel in British Columbia, although its popularity declined when oil became relatively inexpensive. The lack of

convenience is now offset by considerable cost savings, more efficient heaters and a dependable supply. The disadvantages are with regard to the requirement for attention both in storage, heating system operation and cleanup. Consequently wood systems are usually found in remote communities where the homeowner is responsible for his own heat. The more remote the community, the greater the cost advantage of wood because the cost of wood usually declines with distance from a major centre relative to the cost of alternative fuels. The technology of wood heating has centred around the heater/fireplace resulting in an improved efficiency from 20 percent for conventional fireplaces to 50 percent for airtight heaters.

In addition to residential space heating, there have been developments in wood waste conversion for energy used to generate power and for heat. The system can be cost effective relative to oil as long as the fuel supply is gathered in conjunction with other operations. Waste wood systems also include chippers and chip furnaces and fuel densifiers. The fuel densifier is used to chop and press almost any kind of dry organic material into a pelletized fuel. However, it still requires a concentrated supply of fuel and an efficient means of handling the fuel. The system is relatively large scale (although portable) and would exceed the burning requirements of most remote communities. The biggest unknown in any of the wood waste systems is the cost of gathering the wood (if it is not available at one location). In 1979 a call for proposals was made by Supply and Services Canada which would have looked at this and all aspects of wood waste use on Vancouver Island, but it was cancelled after information indicated the expected cost of wood to be 2½ times that of oil. However, reference to Figure 8 indicates that the cost of cordwood based on energy value is less than half the cost of oil. If it is burned efficiently this cost advantage can be maintained.

6.5.3 Application of Wood Waste

The use of wood as a home heating fuel has been well demonstrated but its uses as a fuel for electrical generation and larger heating systems is largely

unproven in British Columbia. A waste fuel co-generator at a lumber mill has recently been installed in the Okanagan, but it is probably too soon to give a performance evaluation. The successful use of wood waste generation will mainly depend on a continued availability of the gathered wood supply at a reasonable price. A change in logging patterns or a mill shutdown could cut the wood waste user from the fuel supply and the surrounding community from its energy. Pollution aspects may also need to be considered, depending on the particular characteristics of the generating site.

6.6 TIDAL POWER

6.6.1 Distribution of Tidal Power

British Columbia is in a zone of mixed, mainly diurnal tides, meaning that there are two high and two low tides a day, but they are not of constant magnitude. Tides vary both in range and timing from day to day and throughout the year. Despite these variables, tides can be predicted accurately and one year's pattern would be much the same as the next.

The entire coastline receives tidal action, but in only a few places is this tidal action concentrated enough to develop, either with a large tidal range or strong currents. The coast line has detailed hydrographic surveys and tidal predictions, although current predictions are not as readily available. However, a relatively short field study or additional analysis by the hydrographic service could provide the required information at any location.

The variables incorporated with a tidal power scheme are very site specific, and it is difficult to say with any certainty what the development prospects are at any coastal remote community. It can only be assumed that if strong currents are present or there is an extreme tidal range that the location may warrant further study. Because of the relatively high cost of tidal power schemes, this would only be considered after other options had been dismissed.

6.6.2 Tidal Power Technology

Tidal power technology is closely related to low head hydro power technology. Designs usually feature physically large, slow turning propeller-type machines mounted in massive civil works. The system depends on a head differential between the main body of water and a closed off estuary. The turbines could be reversible to be able to produce power when the estuary is low and the outside water is high.

The first tidal power project in Canada is presently under construction at Annapolis Royal, Nova Scotia. The installed capacity is 18 MW but it only provides power 50 percent of the time (as it is not reversible) and has an overall average energy production factor of 31 percent of the installed capacity. The $50 million cost of the project converts to $2800/kilowatt. However, if the cost is adjusted by the ratio of the plant's energy production factor to the energy production factor of a small hydro plant (60 percent) the equivalent cost rises to $5300/kilowatt, which is fairly high in comparison to grid power and in the same range as diesel power. This is also regarded as the least expensive tidal power test site in Canada.

An alternative to conventional low head hydro technology for tidal power sites is the vertical axis water turbine which utilizes the kinetic energy of the waterflow. These devices are still in the development stage, but some demonstration units have been tested by the developer, Nova Energy Ltd., and the National Research Council. The units can be mounted in a floating barge or built into a low head barrage. The former depends on the speed of the water current to generate power and the latter operates on a very low head in the order of 1½ to 2 metres. The units can be used for either river of tidal applications. A study is presently being conducted by Nova Energy Ltd to identify remote communities in Canada which could possibly utilize vertical axis water turbines.

A study has also been carried out to assess the potential for generation from kinetic energy in Canadian rivers and estuaries (UMA Group 1980). This determined that the best sites in British Columbia were on the Fraser River near Lytton and in the tidal passages near Campbell River. These areas had very high potential but would not serve remote communities (the study did not attempt to examine remote communities or small scale sites). In addition, the technology for the installations is only presently being developed for small scale units and problems associated with navigation and debris were not considered. The practical and economic problems of tidal power generation will be examined in a study of the power potential of Masset Inlet located in the Queen Charlotte Islands, funded under the Remote Community Demonstration Program.

6.7 GEOTHERMAL ENERGY

6.7.1 General

Geothermal energy is derived from reservoirs of hot water or steam found at shallow depths in the earth's crust. These may be found in volcanic zones, notably the circum-Pacific and Mediterranean zones, or in sedimentary basins, which cover large areas of all continents. Internationally, geothermal energy produces about 2000 MW of electrical energy, mainly in the USA, Italy, Japan and New Zealand, and a much larger quantity of lower-grade heat, used for space-heating, agriculture and industrial applications.

In Canada demonstration projects are in progress in both the volcanic and sedimentary areas, and a research program of resource delineation and technology development is maintained by the federal government. Many small-scale projects utilize hot springs to heat swimming pools or spas, but the size of these is limited by the output of the springs. However, all significant geothermal resources are obtained by drilling to reservoirs.

For the purposes of this study, geothermal resources available to remote communities must be of low capital cost and of small output. Since drilling costs impose a lower limit on the scale of geothermal development, which is at about the 5 MWth or 1 MWe level, the most probable geothermal development

under this program is from the flowing spring. However, true geothermal resources are probably available beneath many remote communities, particularly in the volcanic belts of northern British Columbia and the Yukon, and the sedimentary basins of the MacKenzie Valley, Northern Alberta and British Columbia, and the Arctic Islands.

6.7.2 Distribution of Hot Spring Resources

Approximately 80 hotsprings exist in British Columbia, several of which have been developed as tourist facilities such as at Harrison, Radium, Fairmont and Ainsworth. Several hotsprings exist in off-grid locations near or in communities. Most hotsprings, however, are not sufficiently near to large population centres to significantly displace current energy use. Where additional facilities such as tree farm greenhouses or vegetable greenhouses are planned, the option to use nearby geothermal energy should be explored.

Several north coastal hotsprings in the Bella Coola-Kitimat-Terrace region have a useful thermal energy availability of from 0.5 GJ/hour to over 6 GJ/hour. On Vancouver Island, Hot Springs Cove has a heat flow of 5 GJ/hour and Knight Inlet near a coastal logging camp has a heat flow of 1 GJ/hour.

The following non-coastal areas have hot springs: Canoe River near McBride (1.5 GJ/hour); the Stikine River above the Iskut confluence; near Atlin, (14 GJ/hour); Liard Hot Springs, where heat could be directly or indirectly used after leaving the park area (48 GJ/hour). This energy resource is not shown on Figure 11 as the amount of useful energy deliverable to the remote community is not certain.

6.7.3 Technology and Application

The methods of using hot spring energy are categorized as direct or indirect. Indirect processes convert the heat to mechanical motion, which can then be used to produce electricity. The available energy is limited by the Carnot efficiency of the device, or simply, by the maximum temperature. In the case of Liard Hot Springs, approximately 250 - 300 shaft horsepower may be available using a commercially available freon generator system.

Direct use of geothermal energy generally involves piping the hot water to greenhouses, pools or buildings where the heat is directly used. Either radiant or convection systems extract the heat from the piping system.

6.8 GRID EXTENSIONS

6.8.1 Distribution of the Provincial Electric Grid

The provincial electric grid through the B C Hydro and West Kootenay Power and Light Systems serves the majority of residents in British Columbia. The areas served include East Vancouver Island, the Lower Mainland, the southern interior and areas adjacent to Highways 97 (to Fort St John), 99, 16 and 5. While many of the remote communities lie many miles from the nearest electric grid, others lie within or adjacent to the above service areas and may be close enough to permit a feasible grid connection. Some remote communities are known to lie within one kilometre of high voltage lines, yet the cost of stepping down to normal service voltage levels is prohibitive. The electric and gas transmission and distribution systems are shown on Figure 1.1.

6.8.2. Technical Aspects of Grid Extensions

Most grid extensions involve the lengthening of an existing distribution line, maintaining the same voltage level to the transformer adjacent to the service connection. There is no technical problem in these situations, as long as the line length is not excessive and the power demand is controlled within the allowable limits of the line and transformer capacities.

More complex situations arise when the length of line increases, high loads are at the end of the line and the source voltage is high (138 kV or more). In these cases a more detailed study is required to carefully consider the effect of the extension on the main system and to analyse the future power needs of the area to ensure that transformer and line sizes are adequate. Such an examination should give a breakdown of direct costs of the extension, cost of upgrading the adjoining system, connection costs, load forecasts, subsidies available, and

options available to the community to reduce system cost. These options may include reduced cost by reducing power demands, reduced cost for handling some aspects of the project (such as brush clearing) or the option to contract the work privately.

6.8.3 Application of Grid Extensions

Grid extensions can be treated much like any community energy project whereby the community will have to provide a share of the initial cost. In addition the customers will be paying the standard per kilowatt hour cost for power, which is subject to escalation.

The grid extension can be assisted by the Rural Electrification Assistance program described in Section 8.2. This leads to some complications because it is a subsidy to the consumers and the total cost to society might be less if some other unsubsidized form of energy were available. Additional complexity occurs if the burden of the initial cost is charged to the initial residents while subsequent residents take advantage of the availability of power.

The exact cost of the grid extension is dependent on the power use pattern of a community, peak load, distance to grid, voltage at nearest grid connection and number of customers. All of the above factors are site specific making it difficult to generalize about the cost of a grid extension.

7. ECONOMIC EVALUATION

7.1 GENERAL

The purpose of the economic evaluation is to assist in identifying the more attractive off-oil alternatives from the perspective of the Canadian economy. The various options discussed in Section 5 and Section 6 are intended to reduce the use by the community of crude oil products (heating oil and diesel). This reduction translates into an economic as well as financial cost savings. From the point of view of the community, the (financial) cost savings is the retail price times the fuel volume displaced. However, from the perspective of the Canadian economy, a reduction in domestic oil requirements allows for a reduction of imported oil at the going world prices. That is, the displaced fuel is valued as if it were derived from imported sources. To the extent that the domestic oil price remains below world levels, the economic value of the fuel savings from the perspective of the the Canadian economy will be greater than the financial cost savings from the community perspective.

Economic costs are incurred to realize these energy savings. From the community perspective, the financial costs of implementing an off-oil option may be less than the actual cost because of subsidies, grants, and other forms of assistance. From the broader perspective, however, the total costs must be fully accounted for, including the environmental costs associated with the manufacture, implementation and use of various off-oil devices (eg the cost of the air pollution resulting from wood heating). Only by way of comparing the economic cost savings available to the total cost of the option, can the economic attractiveness be properly assessed.

Unfortunately, this study is too generalized to provide an unambiguous assessment of all the alternative off-oil strategies for all the remote communities. This is because the detailed, site specific, development cost data for constructing the alternative energy supply options is simply not available. Therefore an estimate was developed of the magnitude of the potential cost savings that could be obtained in the various remote communities. This approach provides a useful complement to the subsequent feasibility studies in which site specific information will be gathered for selected proposals.

In Section 7.2, the methodology used in the economic evaluation is summarized. Then three oil pricing scenarios are presented which provide the basis for estimating the social cost savings in the respective communities. In the final section, the gross cost savings asociated with the various options for the appropriate remote communities are summarized.

7.2 METHODOLOGY

The methodology developed here is intended to measure the economic cost savings over the life of the project from the perspective of the Canadian economy. The approach is consistent with the principle for social benefit-cost appraisal put forward by the federal and British Columbia governments.

The value of the social cost savings is the volume of the refined oil products displaced multiplied by the social value. The social values are expressed in terms of constant 1983 dollars which incorporate 'real' price changes. Hence the effects of inflation (a rise in the general price level) is excluded from the analysis.

The cost savings will accrue over a period of years (in most cases 20 years), the sum of which is expressed as a single present value total. Embedded in this total, is the effect of 'discounting' future years in order to reflect the opportunity cost of capital. A 7 percent (real) discount rate was used which is consistent with comparable EMR practices.

In summary, the social cost savings from the perspective of the Canadian economy was estimated by multiplying the oil displacement forecast by the appropriate price, and discounting this stream of values to 1983. In Section 7.3, the oil price scenarios are presented.

7.3 CRUDE OIL PRICE SCENARIOS

The price of refined petroleum products in a given location is the sum of the crude oil cost component, refiner's margin, taxes, and transportation and

distribution margins to the point of sale. The domestic price of oil is regulated in Canada according to agreements between the federal government and the producing provinces. At the time of writing, this price, referred to as the blended price, is the weighted average cost of what has been defined as "old" and "new" crude oil. The "old" crude oil price is set at the wellhead to not exceed 75 percent of the world price of crude oil of similar quality. The "new" category of crude oil receives the corresponding world oil price. Hence, the blended price will gradually approach the world price as the proportion of "old" crude oil production declines over time.

However, for the purposes of the economic analysis, the appropriate cost of the oil, from the perspective of the Canadian economy, is the world oil price. That is, imported oil is the marginal source of energy to Canada and a reduction in domestic oil consumption will eventually result in a reduction in oil imports. Indeed, the displacement of relatively high cost imported oil is the cornerstone of the National Energy Program.

A detailed forecast of the world crude oil price was not attempted. Instead, several of the more recent forecasts were reviewed and a range of price scenarios developed that are considered to reasonably bracket the likely path of future oil prices. Relative to several years ago, the consensus of forecasts anticipate little real price appreciation over the next 3 to 5 years.(1) In general, oil prices are expected to remain constant in real terms (or even fall slightly) through 1984, then begin to escalate once more. Several recent studies have cautioned of the potential for another 'oil crisis' by the early to mid-1990s (Yergin and Hillenbrand, 1983; International Energy Agency, 1983).

(1) Real price escalation refers to growth that is in excess of the rate of general price inflation. Inflation can be excluded from the economic analysis without materially affecting the results. Throughout the economic analysis, 1983 dollars have been adopted as the standard of measure. It should be understood that a constant real price over the forecast period is equivalent to a nominal price escalating at the rate of general price inflation.

An attempt was made to incorporate the range of informed opinion into three oil price scenarios. For the base case, the average price of crude oil landed in Vancouver was taken to be 30 dollars (U S) per barrel in 1983. This price was held constant through 1984, then escalated at an annual rate of 2 percent real. In the "low" oil price scenario, the 1983 price remained constant in real terms to 1989, the escalated at 1 percent real thereafter. For the "high" oil price scenario, the 30 dollars per barrel was maintained to 1985, then escalated at an average annual rate of 5 percent. The three oil price scenarios are presented in Table 7.1.

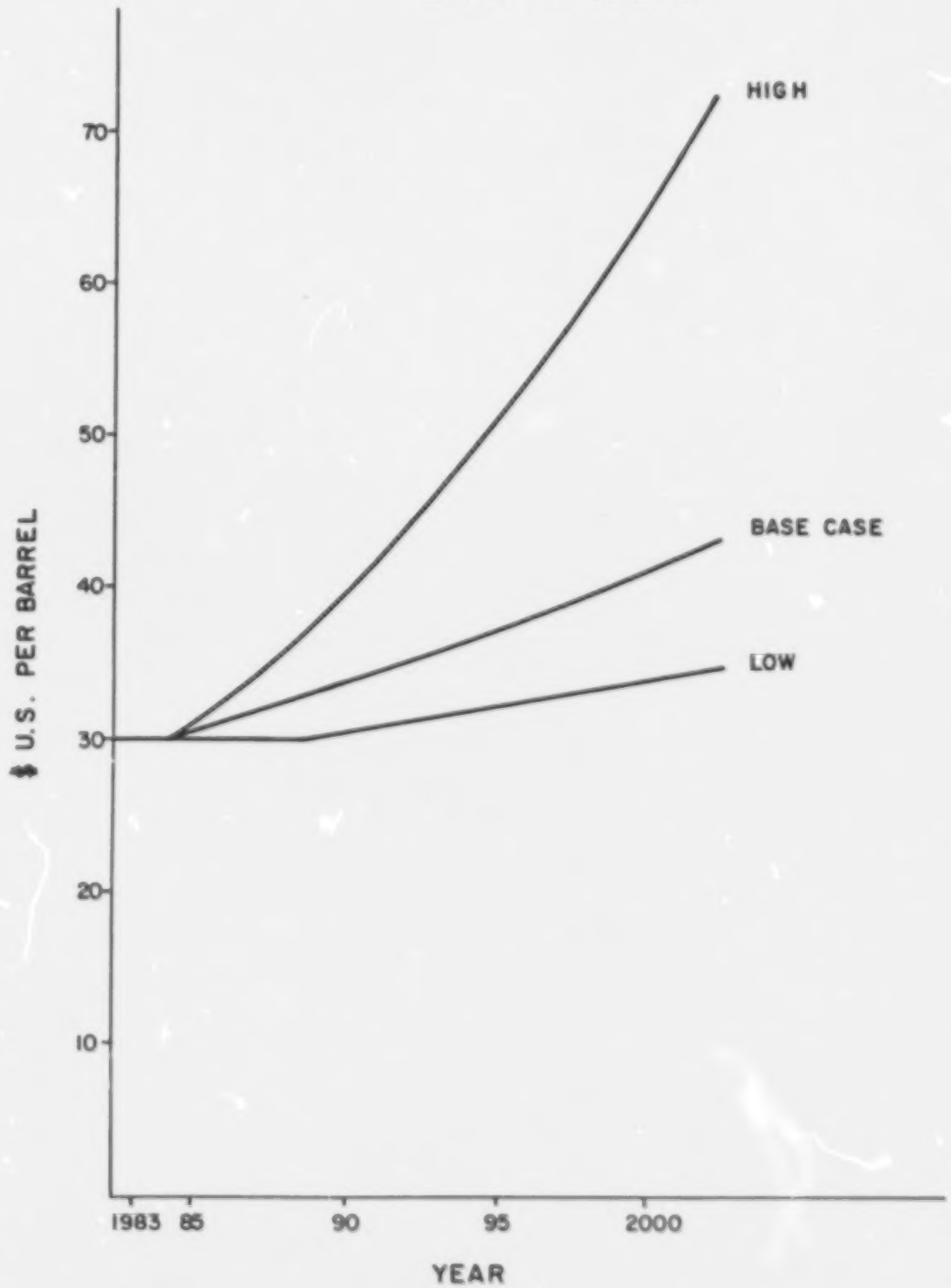
The methodology adopted for forecasting the social value of refined petroleum products in each of the isolated communities was as follows. First, the world crude oil price landed in Vancouver was converted into Canadian dollars using the long term exchange rate forecast prepared by Data Resources of Canada (1983). This yielded the crude cost component of the oil produced valued at world prices. To this must be added the refiner's margin, and the transportation, distribution and retailer's margin to the particular community. These margins were estimated based on the late 1982/early 1983 actual margins, and assumed to remain constant over the forecast period. The refiner's margin was computed as the difference between the blended cost of crude oil delivered to a Vancouver refinery and the refinery gate price of product as reported in the Oil Buyers Guide. The refiner's margin was computed as the differences between the blended cost of crude oil delivered to a Vancouver refinery and the refinery gate price of product as reported in the Oil Buyers Guide. The refiner's margin for home heating oil and diesel was estimated at $0.027/litre.

TABLE 7.1 (Part 1)

WORLD OIL PRICE SCENARIO
(1983 U S Dollars per Barrel)

	Base Case	Low	High
1983	30.00	30.00	30.00
1984	30.00	30.00	30.00
1985	30.60	30.00	31.50
1986	31.20	30.00	33.10
1987	31.80	30.00	34.70
1988	32.50	30.00	36.50
1989	33.10	30.30	38.30
1990	33.80	30.60	40.20
1991	34.50	30.90	42.20
1992	35.10	31.20	44.30
1993	35.80	31.50	46.60
1994	36.60	31.80	48.90
1995	37.30	32.20	51.30
1996	38.00	32.80	53.90
1997	38.80	32.80	56.60
1998	39.60	33.10	59.40
1999	40.40	33.50	62.40
2000	41.20	33.80	65.50
2001	42.00	34.10	68.80
2002	42.80	34.50	72.20

TABLE 7-1 (Part 2)



WORLD OIL PRICE SCENARIO
(1983 U.S. DOLLARS PER BARREL)

The sum of the transportation, distribution, and retailer's margin to the particular community was taken to be the difference between the actual Vancouver refinery gate price of product in late 1982 and the price of fuel reported on the questionnaire. Clearly, this margin varied with the community as reported in Table 7.3.

The sum of the refiner's margin and the crude cost component is defined as the refinery gate price. Since the margin is assumed to remain constant over the forecast period, the escalating refinery gate price is a consequence of the escalating cost of crude oil. The refinery gate prices for home heating oil and diesel for the three price scenarios are presented in Table 7.2.

The refinery gate prices of the two fuels are equal because the observed refiner's margin for both fuels was the same.

The sum of the crude cost component and the respective margins constitute the product price in the respective remote community. The refinery gate price (Table 7.2) plus the margins presented in Table 7.3 yield the product price forecasts for each community. These values are then used in Section 7.4 where the social cost savings (ie social benefit) of the alternative oil substitution strategies are evaluated.

TABLE 7.2

VANCOUVER REFINERY GATE PRICE FOR HOME HEATING OIL AND DIESEL
(Constant 1983 dollars/litre)

	Base Case	Low	High
1983	.257	.257	.257
1984	.255	.254	.255
1985	.259	.255	.266
1986	.262	.253	.276
1987	.266	.253	.288
1988	.270	.251	.300
1989	.272	.251	.310
1990	.274	.250	.321
1991	.281	.254	.337
1992	.286	.258	.355
1993	.293	.261	.372
1994	.300	.264	.392
1995	.306	.268	.414
1996	.311	.270	.430
1997	.317	.273	.451
1998	.323	.275	.472
1999	.329	.278	.494
2000	.335	.280	.517
2001	.341	.282	.542
2002	.348	.285	.567

TABLE 7.3 (Page 1 of 2)

RETAIL, WHOLESALE AND TRANSPORTATION MARGIN
HEATING OIL

Community	Delivered Price	¢/Litre Margin
Cassiar	40.8	16.8
Stewart	36.0	12
Lasqueti Island	55.0	31
Woss	36.0	12
Holberg	30.4	6.4
Atlin	46.6	22.6
Dome Creek/Crescent Spur	44	20.0
Kitkatla	46	22.0
Klemtu	45	21.0
Kyuquot	46	22
Telegraph Creek	35	11
Vernon	36	12
Seymour Arm	44	20
Hartley Bay	46	22
Takla	66	42
Mahatta River	30	6
Sewell Inlet	32	8
Nemaiah Valley	60	36
Fort Babine	44	20
Kingcome Inlet	N/A	N/A
Fort Ware	66	42
Erickson Mine	33	9
Manning Park	27.8	3.8
Nazko Indian Band	60	36
Big Bar	N/A	N/A
Portage	N/A	N/A

TABLE 7.3 (Page 2 of 2)

RETAIL, WHOLESALE AND TRANSPORTATION MARGIN
HEATING OIL

Community	Delivered Price	¢/Litre Margin
Hesquiaht	40	16
Nitinaht	40	16
Toad River	46	22
Trout Lake	33.5	9.5
Baker Mine	61	37
Nuchatlaht	N/A	
Narrows Inlet and Others	34	10
Christian Valley	33.0	9
McNab Camp	36.7	12.7
Meziadin Lake	43	19
Good Hope Lake	33	9
Tatla Lake	33	9
Anahim Lake	33	9
Bella Coola	29	5
Eastgate	50	26
Gilford Island	46	22

NOTE: Margin was calculated as the difference between the refinery gate price of home heating oil in Vancouver during the latter part of 1982, and the delivered price of home heating oil reported by the respective community. The refinery gate price for home heating oil was $0.24/litre.

7.4 VALUE OF ENERGY SAVINGS

The values of the potential energy savings to the community are calculated in this section, based upon the community oil prices of Table 7.3 escalated by the amount of the base price increase in Table 7.2. These prices multiplied by the amount of oil saved through various alternative energy and conservation projects (shown in Figure 11 and Table A 3.1 of Appendix 1) give the cost savings in each successive year. The series of annual cost savings is brought back to a present value at a 7 percent discount rate and summed.

The present value cost savings provide an estimate of the total cost of an off oil project that could be spent in the community to achieve the energy savings shown in Figure 11, assuming that the maintenance cost is relatively small. This assumption may not apply to the wood heat component because the annual cost of wood may or may not be significant, depending on individual circumstances. Present values of energy savings for seven energy saving methods and for the three price scenarios are shown in Table 7.4.

TABLE 7.4 - PRESENT WORTH OF CONSERVATION AND RENEWABLE ENERGY OPTIONS

COMMUNITY	OIL PRICE cents/liter	PRICE SCENERIO 1 - BASE CASE IN $1000							PRICE SCENERIO 2 - LOW CASE IN $1000							PRICE SCENERIO 3 - HIGH CASE IN $1000						
		INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE	INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE	INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE
MASSET	34.00	1282	14390	13707	4041	5117	561	8666	1204	13505	12864	3793	4803	527	8133	1489	16711	15918	4693	5943	652	10064
BELLA COOLA	34.50	779	3727	77028	0	2734	290	2987	732	3501	72352	0	2568	272	2805	903	4321	89294	0	3169	336	3462
SANDSPIT	34.00	868	8893	5154	3280	4082	449	8152	815	8346	4837	3078	3831	422	7650	1009	10328	5986	3809	4741	522	9467
CASSIAR	40.80	681	12298	8138	0	25021	248	27318	646	11655	7713	0	23714	235	25891	775	13983	9253	0	28449	282	31061
STEWART	36.00	485	5159	67799	0	3194	254	6376	457	4858	63836	0	3008	239	6004	560	5950	78193	0	3684	293	7354
BELLA BELLA	35.00	421	1450	0	1154	1790	156	3602	396	1363	0	1084	1682	146	3386	487	1678	0	1335	2071	180	4169
HOLBERG DND	43.00	N/A	1522	0	0	1142	80	3190	N/A	1446	0	0	1085	76	3031	N/A	1721	0	0	1291	91	3607
LASQUETI ISLAND	55.00	121	22	0	0	276	108	N/A	117	21	0	0	265	104	N/A	134	24	0	0	305	120	N/A
MOSS	36.00	97	1736	25763	0	1658	86	2993	92	1635	24257	0	1561	81	2818	112	2003	29713	0	1912	99	3452
HOLBERG	30.40	32	923	0	0	976	63	1560	30	860	0	0	910	59	1454	38	1087	0	0	1150	75	1837
ATLIN	46.60	365	2325	7938	0	2270	224	1476	348	2218	7571	0	2165	213	1408	409	2608	8902	0	2546	251	1655
DOME CREEK / CRESCENT SPUR	44.00	71	1057	11078	0	477	121	N/A	67	1006	10538	0	453	115	N/A	80	1193	12496	0	538	137	N/A
KITKATLA	46.00	209	2001	0	526	516	70	737	199	1907	0	501	492	66	702	234	2247	0	590	580	76	827
DEASE LAKE	50.20	114	2837	0	0	1901	108	1872	110	2715	0	0	1819	103	1791	128	3159	0	0	2117	120	2085
ANAHIM LAKE	33.00	N/A	320	0	0	787	38	1033	N/A	299	0	0	737	35	968	N/A	373	0	0	917	44	1204
TELEGRAPH CREEK	35.00	3	28	6130	0	407	33	449	3	26	5763	0	382	31	422	4	33	7094	0	471	38	520
KLEMTU	45.00	103	619	4523	0	522	41	61	98	590	4306	0	497	39	58	116	697	5090	0	588	46	69
KYUQUOT	46.00	N/A	0	4614	215	167	51	N/A	N/A	0	4398	205	159	49	N/A	N/A	0	5181	241	188	58	N/A
FIELD	33.60	231	1296	2411	0	639	61	723	216	1216	2261	0	600	57	678	268	1508	2804	0	744	71	841
VERNON	36.00	69	1022	26256	0	759	43	1247	65	963	24722	0	715	41	1174	80	1179	30282	0	875	50	1438
BAMFIELD	35.00	51	1172	0	324	769	68	1545	48	1102	0	305	723	64	1452	59	1356	0	375	890	79	1788
ISKUT/EDDONTENAJON	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SEYMOUR ARM	44.00	327	399	8567	0	480	106	N/A	311	379	8149	0	456	101	N/A	369	450	9663	0	541	119	N/A
HARTLEY BAY	46.00	158	1070	0	0	524	53	778	151	1020	0	0	500	50	741	177	1202	0	0	589	59	873
TAKLA	66.00	218	0	0	0	294	51	N/A	211	0	0	0	284	49	N/A	237	0	0	0	320	56	N/A
NAHATTA RIVER	30.00	23	480	0	0	507	26	681	22	447	0	0	472	24	634	28	567	0	0	599	31	803
SEWELL INLET	32.60	21	407	1354	0	528	21	838	19	381	1268	0	494	20	785	24	475	1581	0	616	25	979
NEMAIAH VALLEY INDIAN BAND	60.00	30	0	1965	0	180	31	N/A	29	0	1893	0	173	29	N/A	33	0	2154	0	197	34	N/A
FORT BABINE IR #6	44.00	152	71	0	0	170	24	N/A	144	67	0	0	162	22	N/A	171	80	0	0	192	27	N/A
BIG BAR/DESMOND CREEK AREA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KINGCOME INLET	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FORT WARE	66.00	225	41	0	0	244	29	N/A	217	39	0	0	236	28	N/A	244	44	0	0	266	32	N/A
ERICKSON GOLD MINE VILLAGE	33.00	N/A	408	0	0	3307	10	3908	N/A	382	0	0	3098	10	3661	N/A	476	0	0	3854	12	4555
TIDE LAKE	35.00	N/A	0	1202	0	N/A	N/A	N/A	N/A	0	1130	0	N/A	N/A	N/A	N/A	0	1391	0	N/A	N/A	N/A
LOWER POST	50.00	N/A	0	0	0	266	31	N/A	N/A	0	0	0	255	30	N/A	N/A	0	0	0	296	35	N/A
MANNING PROVINCIAL PARK	27.80	113	1133	5500	0	626	29	993	105	1050	5096	0	580	27	920	135	1351	6558	0	747	35	1184
NAZKO INDIAN BAND	60.00	130	0	0	0	188	37	N/A	126	0	0	0	181	36	N/A	143	0	0	0	206	41	N/A
JUSKATLA	33.00	N/A	261	13350	0	443	17	738	N/A	245	12507	0	415	16	691	N/A	305	15561	0	516	20	860
PORTAGE (NANCUT)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HESQUIAHT	40.00	33	0	772	67	131	15	157	31	0	731	64	124	14	149	37	0	879	77	149	17	179
NITINAHT	38.00	38	0	1423	0	135	13	148	36	0	1343	0	128	12	140	44	0	1631	0	155	15	170
TOAD RIVER AREA	46.00	61	201	0	0	125	18	N/A	58	192	0	0	119	17	N/A	69	226	0	0	140	20	N/A
SCOTTY GOLD	36.00	N/A	0	6779	0	N/A	N/A	N/A	N/A	0	6383	0	N/A	N/A	N/A	N/A	0	7819	0	N/A	N/A	N/A
PROPHET RIVER	46.00	43	49	0	0	140	9	76	41	47	0	0	133	9	72	48	55	0	0	157	10	85
GERMANSEN LANDING	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PENNY	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MOSES INLET	50.00	N/A	0	929	0	N/A	N/A	N/A	N/A	0	889	0	N/A	N/A	N/A	N/A	0	1035	0	N/A	N/A	N/A
GILFORD ISLAND	46.00	16	59	0	0	34	9	34	15	56	0	0	32	9	32	18	66	0	0	38	10	38
STAVE LAKE	30.00	N/A	64	10118	0	43	5	91	N/A	60	9423	0	40	5	85	N/A	74	11941	0	51	7	107
LONGWORTH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TROUT LAKE	33.50	24	50	23820	0	64	19	N/A	23	47	22336	0	60	18	N/A	28	58	27713	0	75	22	N/A
EASTGATE	50.00	11	689	9298	0	328	67	171	11	659	8895	0	313	64	163	13	768	10357	0	365	75	190
NARROWS INLET LOGGING DIV.	34.00	N/A	120	1171	0	125	5	236	N/A	112	1099	0	117	5	221	N/A	139	1360	0	145	6	274
PITT LAKE	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
MACHMELL	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
ACTEON SOUND	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
TINFOR	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274

TABLE 7.4 - PRESENT WORTH OF CONSERVATION AND RENEWABLE ENERGY OPTIONS

COMMUNITY	DI PRICE cents/liter	PRICE SCENERIO 1 - BASE CASE IN $1000							PRICE SCENERIO 2 - LOW CASE IN $1000							PRICE SCENERIO 3 - HIGH CASE IN $1000						
		INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE	INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE	INSUL.	WOOD	HYDRO	WIND	MANA.	SOLAR	WASTE
KNIGHT INLET	34.00	N/A	131	5857	0	130	5	236	N/A	123	5497	0	122	5	221	N/A	152	6802	0	151	6	274
TOM BROWN LAKE	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
PHILLIPS ARM	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
QUATAM RIVER	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
SECHELL CREEK	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
PORT DOUGLAS (HARRISON)	34.00	N/A	136	585	0	133	5	236	N/A	128	549	0	125	5	221	N/A	158	680	0	155	6	274
NOOTKA BAY (NOOTKA)	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
BARCLAY DIV.(KILDONAN)	34.00	N/A	131	1171	0	130	5	236	N/A	123	1099	0	122	5	221	N/A	152	1360	0	151	6	274
OWIKENO	50.60	25	148	0	0	118	9	176	24	141	0	0	113	9	168	28	164	0	0	131	10	195
BOULDER BAY	50.00	28	0	597	0	122	9	214	27	0	571	0	117	9	204	32	0	665	0	136	10	238
SCOTT COVE	30.80	3	103	1073	0	296	4	541	3	96	1001	0	276	3	504	4	121	1262	0	348	4	636
SEYMOUR INLET	30.80	3	103	1073	0	296	4	541	3	96	1001	0	276	3	504	4	121	1262	0	348	4	636
CLEAGH CREEK	30.80	3	103	1073	0	296	4	541	3	96	1001	0	276	3	504	4	121	1262	0	348	4	636
KINGCOME INLET (WHONNOCK)	30.80	3	107	1073	0	302	4	541	3	99	1001	0	282	3	504	4	125	1262	0	355	4	636
DRURY INLET	30.80	3	103	1073	0	296	4	541	3	96	1001	0	276	3	504	4	121	1262	0	348	4	636
GREENWOOD CAMP	40.00	N/A	136	1354	0	104	6	196	N/A	131	1282	0	99	6	185	N/A	158	1543	0	119	7	223
KILBELLA BAY	31.90	N/A	195	1107	0	112	7	160	N/A	182	1033	0	105	7	150	N/A	229	1296	0	132	9	187
NUCHATLAHT	40.00	9	0	433	0	16	4	12	9	0	410	0	15	4	11	10	0	493	0	18	5	13
NICKNAQUEET	30.00	N/A	0	531	0	N/A	N/A	N/A	N/A	0	508	0	N/A	N/A	N/A	N/A	0	591	0	N/A	N/A	N/A
SHOTBOLT	30.00	N/A	0	531	0	N/A	N/A	N/A	N/A	0	508	0	N/A	N/A	N/A	N/A	0	591	0	N/A	N/A	N/A
TATLA LAKE	33.00	N/A	57	581	0	250	10	459	N/A	53	545	0	234	10	430	N/A	67	678	0	291	12	535
SHEEMAHANT	37.80	4	262	115	0	123	3	178	4	247	109	0	116	2	168	5	300	132	0	142	3	204
SIMOOM SOUND	46.00	N/A	0	0	0	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A
SAVARY ISLAND	35.00	N/A	0	449	0	N/A	N/A	N/A	N/A	0	431	0	N/A	N/A	N/A	N/A	0	496	0	N/A	N/A	N/A
BAKER MINE CAMP	61.00	N/A	0	39	0	4010	20	4430	N/A	0	37	0	3865	20	4270	N/A	0	65	0	4389	22	4849
WESTERN MINES (MYRA FALLS)	33.00	N/A	47	13653	0	3273	1	5099	N/A	44	12791	0	3066	1	4777	N/A	55	15914	0	3815	1	5943
HORNET	30.00	N/A	0	137	0	N/A	N/A	N/A	N/A	0	146	0	N/A	N/A	N/A	N/A	0	185	0	N/A	N/A	N/A
CHRISTIAN VALLEY	33.00	13	81	29	0	32	8	N/A	13	75	27	0	30	8	N/A	16	94	34	0	37	10	N/A
BARR CREEK	33.00	N/A	0	228	0	N/A	N/A	N/A	N/A	0	213	0	N/A	N/A	N/A	N/A	0	265	0	N/A	N/A	N/A
EARLS CREEK	33.00	N/A	0	228	0	N/A	N/A	N/A	N/A	0	213	0	N/A	N/A	N/A	N/A	0	265	0	N/A	N/A	N/A
MCNAB CAMP	36.70	0	62	627	0	109	1	202	0	59	590	0	102	1	191	0	72	771	0	125	2	233
MEZIADIN LAKE - HIGHWAYS	43.00	N/A	218	0	0	306	11	420	N/A	207	0	0	291	11	399	N/A	247	0	0	346	13	475
BOB QUINN LAKE	33.00	N/A	173	19	0	24	5	N/A	N/A	162	18	0	22	5	N/A	N/A	202	22	0	28	6	N/A
GOOD HOPE LAKE - HIGHWAYS	37.20	3	209	15	0	275	6	363	3	197	14	0	259	6	342	4	241	17	0	316	7	417

Note: 1. The above present worth values assume no load growth.

2. The present worth of Cassiar's energy sources are given for 20 years, although the expected mine life is 10 years. The 10 year present worth would be about 2/3 of the values shown.

8. ENERGY POLICIES OF AGENCIES CONCERNED WITH REMOTE COMMUNITIES

8.1 GENERAL

Remote communities in British Columbia have several energy choices to suit individual preferences and budgets, much the same as nonremote communities. However, an important difference is that nonremote communities have more, generally less expensive options to choose from. In particular the provincial gas and electrical grids usually offer the lowest prices for purchased energy to non remote communities, therefore the main agencies concerned with energy supply are the gas and electric utilities.

Despite the relatively small population in remote communities (about 1 percent of the provincial total) a number of agencies are concerned with their energy supplies and costs. A discussion on the policies of many of these agencies is included below.

8.2 B C HYDRO

B C Hydro is directly responsible for the electricity supply for 12 remote communities in British Columbia using diesel generating stations. In addition B C Hydro receives many applications from communities adjacent to the grid for extensions and tie-ins, which would change the community status from remote to nonremote. Other communities have applied to B C Hydro to establish a diesel generating station. B C Hydro has had a low interest insulation loan program available for several years, but there has been no application from any remote community.

When a community applies for a power line extension, B C Hydro will respond through the local district office, giving a cost estimate for the construction and showing the amount of subsidy. The subsidy is handled through the Rural Electrification Assistance program (REA) and is allocated to each principal residence as follows:

1.	First $2,000 of construction cost	100% B C Hydro
2.	Next $10,000 of construction cost	90% B C Hydro 10% customer
3.	Next $6,000 of construction cost	80% B C Hydro 20% customer

(Item 3 applies to productive farms only)

Non principal residences receive an allocation of $400 only. The balance of cost must be paid by the customer. The REA assistance only applies to single phase extensions along public roads, and is not intended for use for a new subdivision, or for retirement and recreational communities. General service connections can be considered as principal residences, or given a subsidy of four times the estimated annual revenue, whichever is greater.

B C Hydro has high expenses at its remote diesel operations which are not covered by the revenues. The fuel cost alone is greater than the rates charged to the customers, hence there is a loss on every kilowatt hour generated. B C Hydro makes no restrictions on power use in these areas, other than to increase the cost per kilowatt hour after the first 2450 kW.h used in a billing period. However this charge still does not meet the cost of generation.

B C Hydro treats applications for a new diesel plant on the basis of the individual circumstances. Formerly, at least 50 customers were needed, but it now appears unlikely that B C Hydro will become further involved in remote diesel systems, unless there is a substantial increase in the revenue from diesel generated energy.

The policy of West Kootenay Power and Light is similar to that of B C Hydro, but with only a $1000 grant applied to each principal residence for grid extensions. There is no diesel community within the West Kootenay system.

8.3 INDIAN AND NORTHERN AFFAIRS CANADA

Indian and Northern Affairs Canada is responsible for about 17 Reserves that provide their own power and are large enough to qualify under the Remote Community Demonstration Program as shown on Table 3.1. The present power usage at these locations varies considerably, from Reserves with part time generation for community buildings only, to Reserves with full diesel generation to provide all community power needs. Two Reserves have small hydro power systems to provide all community power needs (except space heating).

There is a basic commitment to provide adequate water, housing and power at Reserves, but not every Reserve has the same standards. There is no official policy toward power supply but the unofficial policy is to provide customers with the average power demanded by the rest of British Columbia residents (about 700 kW.h per month). The individuals would be responsible for paying an equivalent cost (to B C Hydro rates) for the first 700 kW.h and the full cost for any excess. A departmental subsidy would only apply to the first 700 kW.h per month. The questionnaire response indicated that this policy has not yet been applied to all of the Reserves, as some are using excessive power while others have inadequate power. Wherever possible, the agency would prefer to be out of the power supply business and have each Band connected to a utility.

8.4 CANADA MORTGAGE AND HOUSING CORPORATION

The Canada Mortgage and Housing Corporation (CMHC) is responsible for setting Canadian housing standards, providing financial assistance to qualified individuals and administering a number of housing programs. The main program relevant to the Remote Community Demonstration Program is the Section 40 Rural and Remote Housing Program. This program is directed at any low income individual living off an Indian Reserve. Standard design houses are built, with extra insulation in northern areas and the payments are subsidized to reduce the monthly payment to 25 percent of the family income.

The energy consumption of the household is also subsidized. Average home utility bills have been estimated for various communities throughout British Columbia and compared with the costs for a similar home in the Lower Mainland. The excess costs may be deducted from the mortgage payment in order to ensure that these housing costs are limited to 25 percent of income plus the cost of Lower Mainland utilities.

8.5 PROVINCIAL GOVERNMENT

The provincial government, through the Public Utilities Commission (PUC), the Ministry of Lands, Parks and Housing (MLPH) and the Ministry of Energy, Mines and Petroleum Resources (MEMPR) formerly took an active role in subsidy programs and incentives for remote community development. Budget restraints have since curtailed most of these programs.

The Rural Electrification Assistance program (REA) was established to help remote communities pay for a tie-in to the electric grid. It provided for funds on the basis of average costs per principal residence broken down as follows:

1. First $1000 paid by Utility
2. Next $10,000 shared equally with Utility and REA
3. Balance paid by customer

This provincial program was cancelled in mid 1982, but B C Hydro has continued it as described in Section 8.2. The Ministry of Lands, Parks and Housing formerly participated in the Section 40 Rural and Remote Housing Program, but dropped out at the end of 1982.

The Ministry of Energy, Mines and Petroleum Resources has also suffered funding cutbacks. There is no specific program, but the Conservation and Renewable Energy Branch has funded several studies on renewable energy sources in British Columbia. A few demonstration projects have also been funded but commitments to these are judged on a case by case basis.

8.6 ENERGY, MINES AND RESOURCES CANADA

Energy, Mines and Resources Canada (EMR) has several established programs to assist with conservation and oil fuel substitution in all regions, such as the CHIP and COSP programs. More recently, the Remote Community Demonstration Program has been established to assist remote communities specifically.

The Canada Home Insulation Program (CHIP) has been established throughout Canada to encourage bringing homes up to modern insulation standards. Homeowners may apply for a taxable grant of up to $500, ($350 materials and $150 labour) per house, provided it is old enough and has not previously received a grant.

The Canada Oil Substitution Program (COSP) provides grants for covering oil fired furnaces to gas, wood, electric, solar or heat pump systems, depending on the availability of the alternative in various regions. A taxable grant of up to $800 can be applied to the supply and installation of the new system.

The Remote Community Demonstration Program (RCDP) was established in 1982 to demonstrate conservation and renewable energy technology in remote communities across Canada and reduce oil consumption for residential purposes. The first phase of the program provides funding for feasibility studies in remote communities covering various relevant means of reducing oil consumption. The second phase of the program will provide funding for selected demonstration projects which will provide cost effective benefits to the community and demonstrate technology relevant to other communities.

The Conservation and Renewable Energy Demonstration Agreement (CREDA) is jointly funded with the provincial government and administered provincially. A number of useful demonstration projects have resulted from this program.

8.7 REVENUE CANADA

The Taxation Branch, working in cooperation with EMR, has several incentives available to facilitate the development of alternative energy and conservation projects. These include accelerated income tax write-offs (capital cost allowances) on equipment such as heat recovery systems, small hydro systems, solar heating and non oil combustion equipment. Such equipment is eligible for complete write off in 3 years, provided it is purchased before 1985 and is certified as qualifying for the program by EMR. The program is designed to assist businesses reduce oil consumption and individuals would not be eligible unless the costs of the equipment could be charged against the income of a business operated by the individual.

8.8 REGIONAL DISTRICTS

In British Columbia there are 29 Regional Districts which act as a second level of municipal government. In remote communities, which are typically unincorporated, the Regional District is the only level of municipal government and therefore it has the opportunity to assume a significant role. Twenty of the Regional Districts in the province contain remote communities.

The level of knowledge about remote communities varies considerably from one Regional District office to the next. Often this is dependent on the remote communities themselves and the degree of involvement they desire with municipal government. Although their financial and technical contribution is relatively small, those Regional Districts contacted have indicated strong moral support for the efforts of any remote community within their boundaries to improve their energy supply situation. Their role may become more important as an intermediary with other bodies on behalf of a remote community as an energy project is designed and constructed.

9. RECOMMENDATIONS

9.1 FINDINGS OF THE STUDY

The Energy Overview Study for British Columbia primarily provides a catalogue and a profile of the energy use for a large number of communities, but also demonstrates many aspects of energy use and conservation which can usually be explained by the particular circumstances of the community, as detailed below:

1) Most communities have wood available for heating and make use of it to varying extents. The lower the community income the more wood is used because it can be obtained at essentially no cost for those with the time to gather it.

2) Where electric power is available through a distribution system, the use of power falls within a narrow range, and is relatively insensitive to the amount of subsidy attached to the power rate. Where the homeowner is responsible for his own generation, electric power use ranges from zero to near the provincial average and is related to the income and needs of the individual.

3) In resource development communities the use of energy for transportation often exceeds energy use for residential purposes by a wide margin.

4) Commercial and industrial energy use ranges from 0 - 90 percent of the community total for all the remote communities. Commercial and industrial energy tends to average about 50 percent of the total energy use for the larger mixed communities.

5) The use of energy conservation practices and renewable energy is relatively small in most communities and there is not a full awareness of financial and technical opportunities.

6) Most renewable energy resource systems and energy conservation and substitution systems are of a relatively simple nature. Installation and operation can be competently handled with some initial outside training in specific skills. Some forms of equipment could be fabricated in the community, further enabling community self-sufficiency while offering short and long term employment.

7) The majority of communities have several methods of reducing oil consumption, some of which would be cost effective. The development of a community energy plan involving an assessment of energy use and conservation, alternative sources, costs, potential energy savings and employment opportunities, would be desirable for every community.

8) The use of electric water and space heat in areas where diesel generated electricity is used should be discouraged.

9.2 RELEVANCE OF THE REMOTE COMMUNITY DEMONSTRATION PROGRAM

Based on the responses received, the Remote Community Demonstration Program is potentially relevant to all of the communities in the study. The foreseeable problems that will be encountered arise not from the program structure but from the diversity of the communities themselves and the relatively limited number of suitable techniques for reducing oil consumption.

Community diversity plays a role because most of the communities have an unorganized municipal government and management of the community is either in the hands of a company or not formally attended to. A few exceptions exist where various individuals are taking a leading role in assisting their community to improve its energy situation.

Regarding the resource based company, located in a remote community, the energy expenses, though high, are relatively minor compared with the resource value and the value of wages. With the volatility of the market place, it is sometimes difficult for a company to justify capital expenditure on a renewable energy source unless the payback period is relatively short.

A further problem is that the program, while intended to demonstrate various means of reducing oil consumption through conservation and renewable energy projects, will be presented with relatively few project types and technologies. On the one hand, each community situation will be different and will require a unique solution, while on the other hand the solution may be similar to the solution for another community, or it may be similar to an existing project. If a significant subsidy is involved, the demonstration value of a project may be reduced if other communities cannot afford to build a similar project without a subsidy.

9.3 POLICIES TOWARD REMOTE COMMUNITIES

As indicated in Section 8, most government agencies have some policies toward remote communities, with a range of tangible benefits to each community. As with any program of this type, the largest problem may be its financial limitations if there are too many worthy applicants for the available funds. There is also a problem of an equitable distribution of subsidies to various communities. As an example of policy inequality, the B C Hydro rural electrification (REA) grant will not benefit communities too far from the grid. However, the assets of B C Hydro (of which the REA grant is representative) have been built up in one way or another by all taxpayers in the province.

The only means many communities now have of obtaining assistance with developing their own energy resources is the Remote Community Demonstration Program. The program funding will serve to demonstrate a number of energy saving methods and direct benefit will accrue to the community receiving funding. However, there will still be many deserving communities which will not be able to benefit from the program unless additional funding can eventually be provided to reduce their dependence on oil.

The economics of various energy supply and conservation alternatives will be demonstrated through the feasibility studies and demonstration projects of the Remote Community Demonstration Program, providing a documented evaluation of the energy savings to the remote communities, and an effective basis for determining future levels of assistance which are representative of the local, provincial and national perspectives.

10. REFERENCES

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- Mr Michaelson

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REMOTE COMMUNITY DEMONSTRATION PROGRAM

OVERVIEW STUDY FOR BRITISH COLUMBIA

FIGURES

DISCUSSION OF FIGURES

1.1 REGIONAL DISTRICT LOCATION MAP

1.2 WIND GEOTHERMAL GRID LOCATION MAP

1.3 SMALL HYDRO LOCATION MAP

These figures indicate the locations of the remote communities identified in this study and their proximity to transmission line and gas line corridors. The numbers correspond to the community population rank in Figure 2. Regional Districts are shown along with the communities which have potential alternative sources of energy supply.

2. ENERGY PROFILE SUMMARY - POPULATION

This figure provides a ranking of the remote communities by population and indicates that most of the population in remote communities is contained within a small number of communities.

3. ELECTRICAL LOAD PATTERNS FOR
REMOTE COMMUNITIES SERVED BY B C HYDRO

There was little correlation between communities when total electrical loads were considered, but this figure shows that the pattern of the load is more extreme for northern communities while southern, coastal communities use electricity more uniformly throughout the year.

4. DAILY ELECTRICAL LOAD CURVE

This figure shows the electrical demands that would be expected from a group of typical homes in a community where there is no constraint on electrical energy use (but space heating is done by other means). Individual homes would at times use a little less or greatly more than these estimates, but collectively their power fluctuations would average to the pattern shown.

5. ENERGY PROFILE SUMMARY
HOUSEHOLD ENERGY EXPENSES

This figure is based upon direct questionnaire responses where possible. In other instances the questionnaire response was sufficient to develop an estimate of energy expense based on the cost of oil, the type of housing reported and the degree days. A number of communities reported no electricity to dwellings and heat by self-gathered wood. These are shown as a nominal $1 per year for their energy use.

6. ENERGY PROFILE SUMMARY
HOUSEHOLD ELECTRICAL CONSUMPTION

The average annual residential electrical energy use is readily available from B C Hydro records in the 12 communities served, but estimates must be made in other locations. These go as low as 0 kW.h in communities where there is no central electric distribution and few if any generators. In other communities the estimates were based on the total central generation (where data are available) less the commercial/industrial portion. Consideration was also given to the location and class of community before preparing the estimate.

7. ELECTRICAL DEMAND BREAKDOWN

The figures provided are averages for typical houses and life styles and are mainly useful to indicate the large proportion of energy that can go to space heat. In addition the charts indicate that only 32 percent of the energy not used for space heat is used for purposes that are best served with electricity while the other uses (refrigerator, range, water heat) can in most cases be operated more efficiently by burning fuel directly instead of using diesel generated electricity.

8. RESIDENTIAL HEATING COSTS

This figure is based upon the calculations of Section 4, assuming some typical insulation levels and fuel prices. The graph is intended to show the potential

savings available with different fuels and insulation levels and is especially relevant to northern areas. Note that natural gas is shown for comparison only.

9. ENERGY PROFILE SUMARY
TOTAL ENERGY USE

Total energy use in most communities was a combination of residential, nonresidential and transportation uses. However, few communities could supply all the requested information. This required estimates to be made based on average electrical usage and average heating usage for the building type and the climate zone. A logarithmic scale is used to account for wide ranges in energy uses caused by population variations and industrial energy uses.

10. ENERGY PROFILE SUMMARY
EXISTING COMMUNITY ENERGY SUPPLIES

Existing community energy supplies are dominated by oil, wood and propane. A few communities have small hydro power plants which make significant contributions to the community energy supply. The chart is intended to show order of magnitude differences between communities and clearly shows the higher energy use at industrial communities.

11. ENERGY PROFILE SUMMARY
CONSERVATION AND RENEWABLE ENERGY POTENTIAL

This chart is intended to show viable means of reducing oil consumption. Conservative estimates of the various potential conservation and renewable energy alternatives have been made. It should be noted that all of these methods would not likely be utilized at once, nor would they be additive. In addition, the values presented are related to the information obtained in questionnaires, so further study with specific detailed community information would be required before priorities could be determined.

LIST OF REMOTE COMMUNITIES

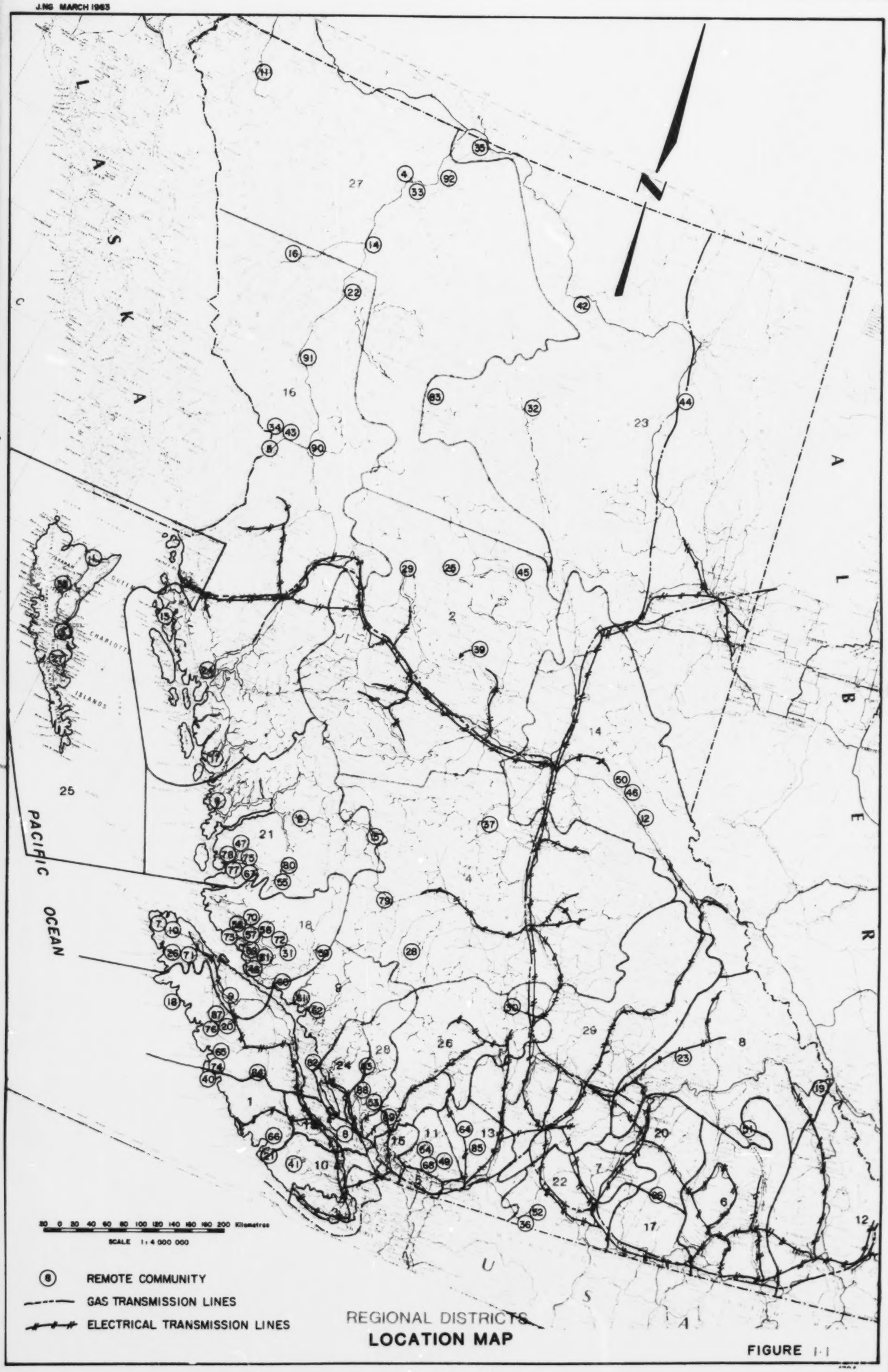
RANK	POPULATION	COMMUNITY	RANK	POPULATION	COMMUNITY
1	3175	HAGWET	47	70	ROSES INLET
2	3047	BELLA COOLA	48	67	GILFORD ISLAND
3	3000	SANDSPIT	49	55	STAVE LAKE
4	1930	CASSIAR	50	53	LONGWORTH
5	1436	STEWART	51	50	TROUT LAKE
6	1414	BELLA BELLA	52	50	EASTGATE
7	650	HOLBERG RMD	53	45	HARBOUR INLET LOBRING DIV.
8	587	LASKETT ISLAND	54	45	PITT LAKE
9	548	UCONS	55	43	MACHMELL
10	476	HOLBERG	56	43	ACTEON SOUND
11	475	ATLIN	57	43	TINFOR
12	475	DOME CREEK / CRESCENT SPUR	58	43	HAKEMAN SOUND
13	443	KITKATLA	59	43	KNIGHT INLET
14	430	BEABE LAKE	60	43	TOM BROWN LAKE
15	372	ANAHIM LAKE	61	43	PHILLIPS ARM
16	350	TELEGRAPH CREEK	62	43	QUATAM RIVER
17	314	KLEMTU	63	43	SECHELL CREEK
18	300	KYUQUOT	64	43	PORT DOUGLAS (HARRISON)
19	270	FIELD	65	43	HOOYA BAY (HOOTKA)
20	251	VERNON CAMP	66	43	BARCLAY DIV.(KILDONAN)
21	250	BANFIELD	67	43	QWIKENO
22	250	IKKUT/EDDONTENAJON	68	43	BOULDER BAY
23	217	SEYMOUR ARM	69	43	SCOTT COVE
24	214	HARTLEY BAY	70	43	SEYMOUR INLET
25	208	TAKLA	71	43	CLEARIH CREEK
26	195	NAHATTA RIVER	72	43	KINGCOME INLET (WHONNOCK)
27	183	BEWELL INLET	73	43	DRURY INLET
28	175	NEMAIAH VALLEY INDIAN BAND	74	44	BREFHOOD CAMP
29	170	FORT BABINE IR 04	75	41	KILBELLA BAY
30	150	BIG BAR/JESNOND CREEK AREA	76	40	NUCHATLAHT
31	147	KINGCOME INLET	77	40	NICKNABUKET
32	145	FORT WARE	78	40	SHOTBOLT
33	130	ERICKSON GOLD MINE VILLAGE	79	37	TATLA LAKE
34	129	TIDE LAKE	80	32	SHEKAHANT
35	123	LOWER POST	81	32	SIMOON SOUND
36	121	HAMBING PROVINCIAL PARK	82	31	BAVARY ISLAND
37	113	HAZEG INDIAN BAND	83	30	BAKER MINE CAMP
38	100	JUSKATLA	84	30	WESTERN MINES (MYRA FALLS)
39	95	PORTAGE (HANCUT)	85	30	HORNET
40	90	MESHIANT	86	26	CHRISTIAN VALLEY
41	81	HITINANT	87	25	BARR CREEK
42	80	TOAD RIVER AREA	88	25	EARLS CREEK
43	80	SCOTTY GOLD	89	19	NCMAR CAMP
44	78	PROPHET RIVER	90	17	HEZIADIN LAKE - HIGHWAY8
45	77	GERMANSEN LANDING	91	17	BOB QUINN LAKE
46	74	PENNY	92	12	GOOD HOPE LAKE - HIGHWAY8

NOTES: 1. Total Remote Community Population = 25,451
SOURCES: Statistics Canada, Regional Districts, B.C. Hydro, Dept. of Indian Affairs, Private Companies, Private Citizens.

2. For Community Locations see Figure 1

LIST OF REGIONAL DISTRICTS

1. Alberni-Clayoquot
2. Bulkley-Nechako
3. Capital
4. Cariboo
5. Central Fraser Valley
6. Central Kootenay
7. Central Okanagan
8. Columbia-Shuswap
9. Comox-Strathcona
10. Cowichan Valley
11. Dewdney-Alouette
12. East Kootenay
13. Fraser-Cheam
14. Fraser-Fort George
15. Greater Vancouver
16. Kitimat-Stikine
17. Kootenay Boundary
18. Mount Waddington
19. Nanaimo
20. North Okanagan
21. Central Coast
22. Okanagan-Similkameen
23. Peace River-Liard
24. Powell River
25. Skeena-Queen Charlotte
26. Squamish-Lillooet
27. Stikine Region (unincorporated)
28. Sunshine Coast
29. Thompson-Nicola



LOCATION MAP

FIGURE 1-1

FIGURE 1-2

Remote Communities with
Wind Power Potential
Geothermal Potential
Grid Extension Potential

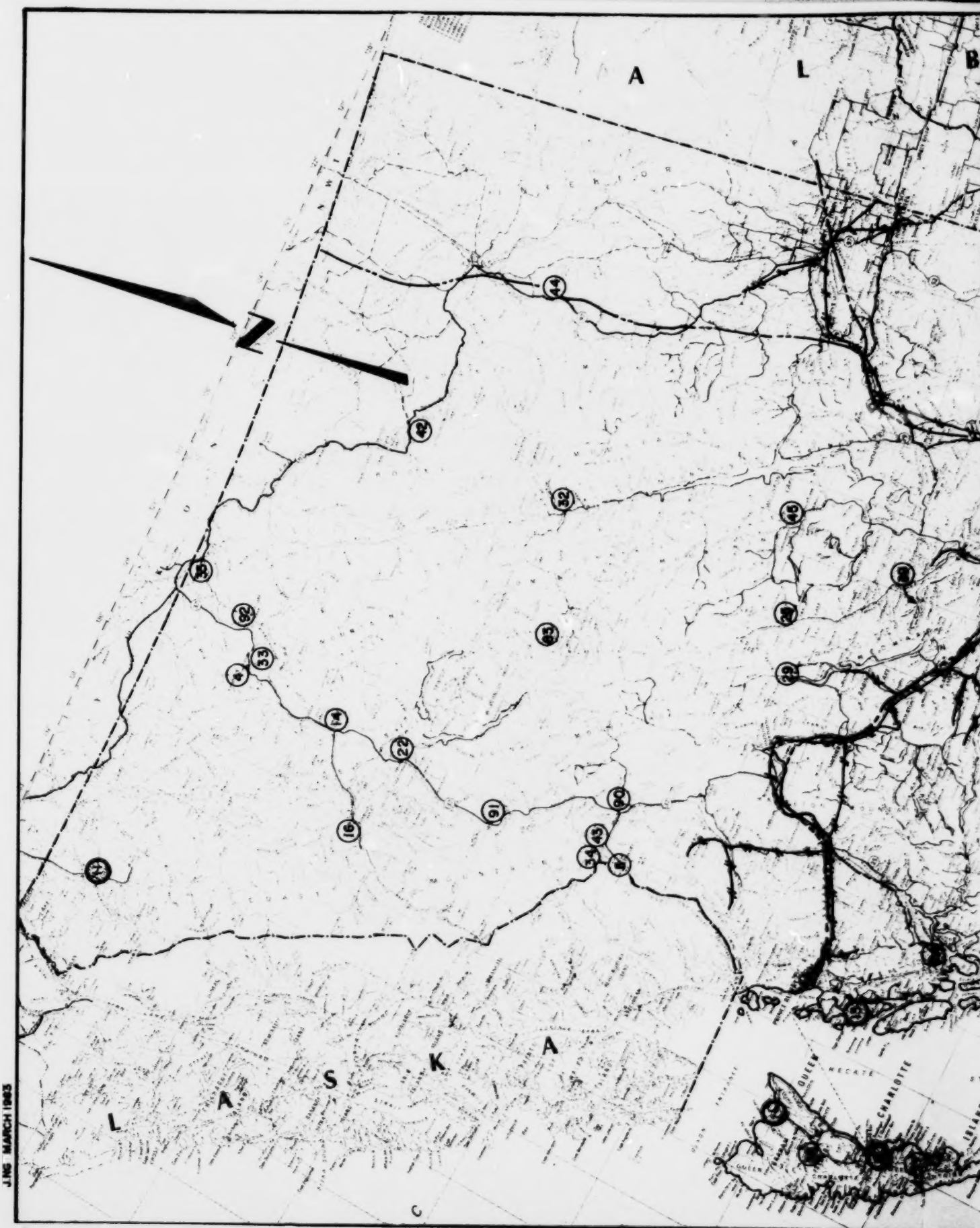
LIST OF REMOTE COMMUNITIES

RANK	POPULATION	COMMUNITY
1	3175	NASRET
2	3047	BELLA COOLA
3	3000	SANDSPIT
4	1850	CASSIAR
5	1436	STEWART
6	1414	BELLA BELLA
7	450	HOLBERG RND
8	387	LASQUETI ISLAND
9	348	HOSS
10	474	HOLBERG
11	473	ATLIN
12	475	BONE CREEK / CRESCENT SPUR
13	463	KITKATLA
14	450	BEASE LAKE
15	372	ANAHIM LAKE
16	350	TELEGRAPH CREEK
17	314	KLEMTU
18	300	KYUQUOT
19	270	FIFLD
20	251	VERNON CAMP
21	250	BANFIELD
22	250	ISKUT/EDONTENAJON
23	217	SEYMOUR ARM
24	214	HARTLEY BAY
25	208	TAKLA
26	195	NAHATTA RIVER
27	182	BFWELL INLET
28	175	NEMAIAH VALLEY INDIAN BAND
29	170	FORT BABINE IR 64
30	150	BIG BAR/JESMOND CREEK AREA
31	147	KINCOME INLET
32	145	FORT WARE
33	130	ERICKSON GOLD MINE VILLAGE
34	125	TIDE LAKE
35	123	LOWER POST
36	121	MANNING PROVINCIAL PARK
37	115	HAZEL INDIAN BAND
38	100	JIBKATLA
39	95	PORTAGE (HANCUT)
40	90	NESQUEAHT
41	81	NITINAHT
42	80	TOAD RIVER AREA
43	80	SCOTTY GOLD
44	78	PROPHET RIVER
45	77	BERNARD H LANDING
46	74	PENNY
47	70	HOSES INLET
48	67	GILFORD ISLAND
49	55	STAVE LAKE
50	53	LONGWORTH
51	50	TROUT LAKE
52	50	EASTGATE
53	45	NARROWS INLET LOGGING DIV.
54	45	PITT LAKE
55	45	MACHNELL
56	45	ACTEON SOUND
57	45	TINFOR
58	45	WAKEMAN SOUND
59	45	KNIGHT INLET
60	45	TOM BROWN LAKE
61	45	PHILLIPS ARM
62	45	GUATAN RIVER
63	45	SECHELL CREEK
64	45	PORT DOUGLAS (HARRISON)
65	45	NOOYA BAY (NOOTKA)
66	45	BARCLAY DIV. (KILDONAN)
67	45	QUIKENO
68	45	BOULDER BAY
69	45	SCOTT COVE
70	45	SEYMOUR INLET
71	45	CLEAGH CREEK
72	45	KINCOME INLET (KHOWOCK)
73	45	BRURY INLET
74	44	BREFWOOD CAMP
75	41	KILDELLA BAY
76	40	NUCHATLAHT
77	40	NICKNAQUEET
78	40	SHOTBOLT
79	37	TATLA LAKE
80	32	SHEEHAHANT
81	32	SIMOON SOUND
82	31	BAVARY ISLAND
83	30	BAKER MINE CAMP
84	30	WESTERN MINES (MYRA FALLS)
85	30	HORNET
86	26	CHRISTIAN VALLEY
87	25	BARR CREEK
88	25	EARLS CREEK
89	19	MCNAB CAMP
90	17	HEZIADIN LAKE - HIGHWAYS
91	17	BOB QUINN LAKE
92	12	GOOD HOPE LAKE - HIGHWAYS

NOTES: 1. Total Remote Community Population = 25,451

SOURCES. Statistics Canada, Regional Districts, BC Hydro, Dept of Indian Affairs, Private Companies, Private Citizens.

2 For Community Locations see Figure 1



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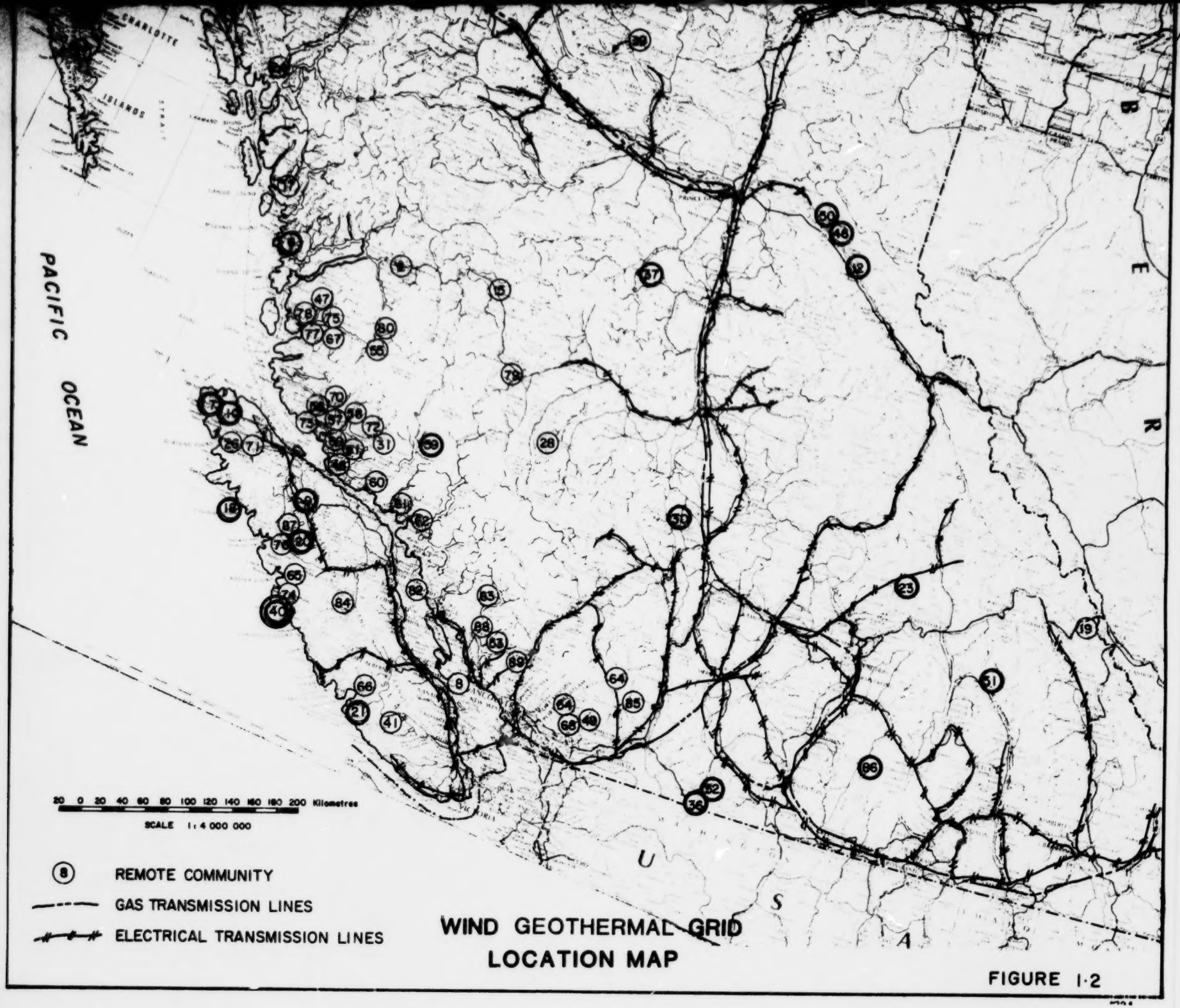

PACIFIC OCEAN
CHARLOTTE ISLANDS
B C
U S A
20 0 20 40 60 80 100 120 140 160 180 200 Kilometres
SCALE 1:4 000 000
8 REMOTE COMMUNITY
GAS TRANSMISSION LINES
ELECTRICAL TRANSMISSION LINES
WIND GEOTHERMAL GRID
LOCATION MAP

FIGURE 1·2

FIGURE 1-3

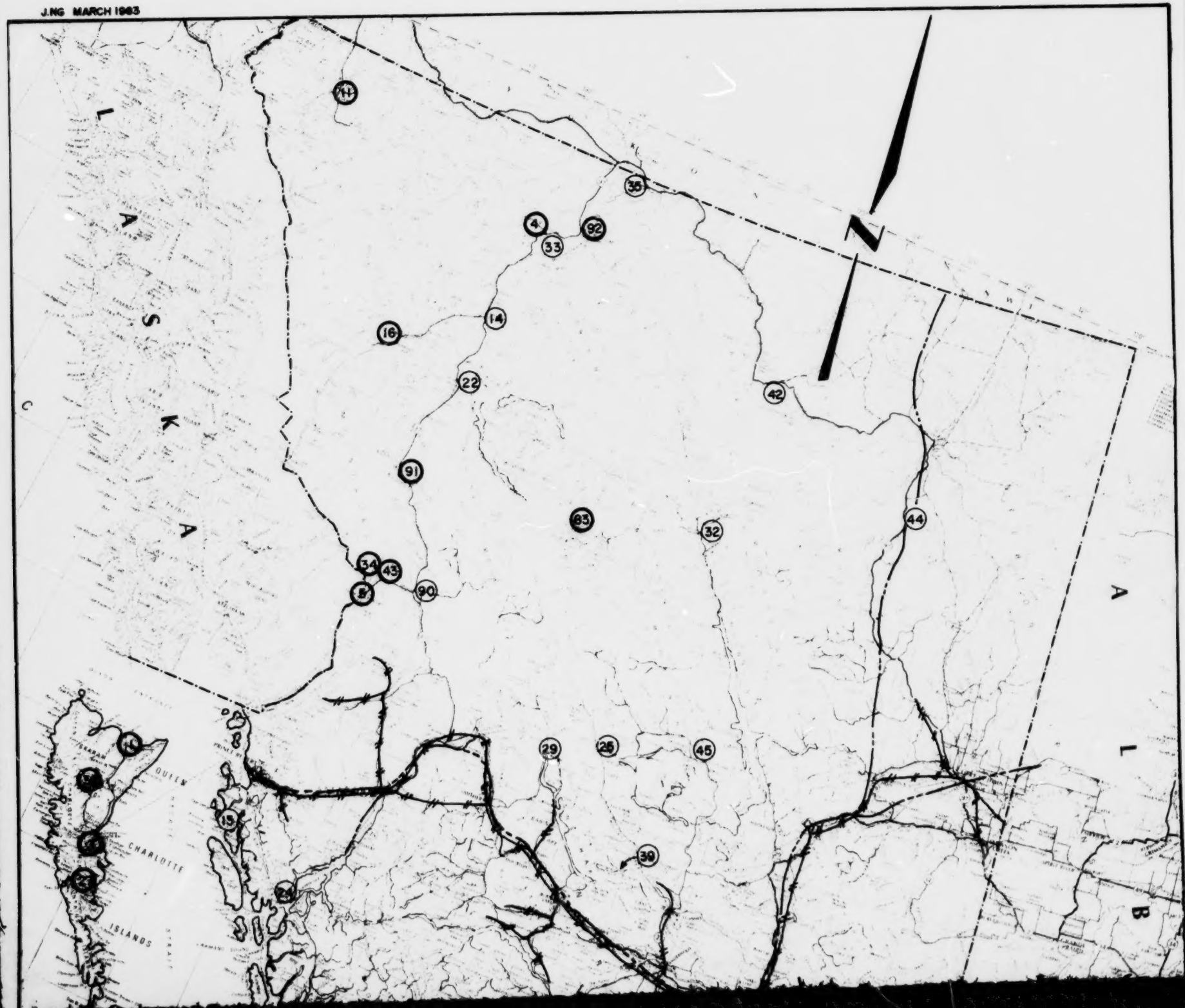
Remote Communities with
Small Hydro Power Potential

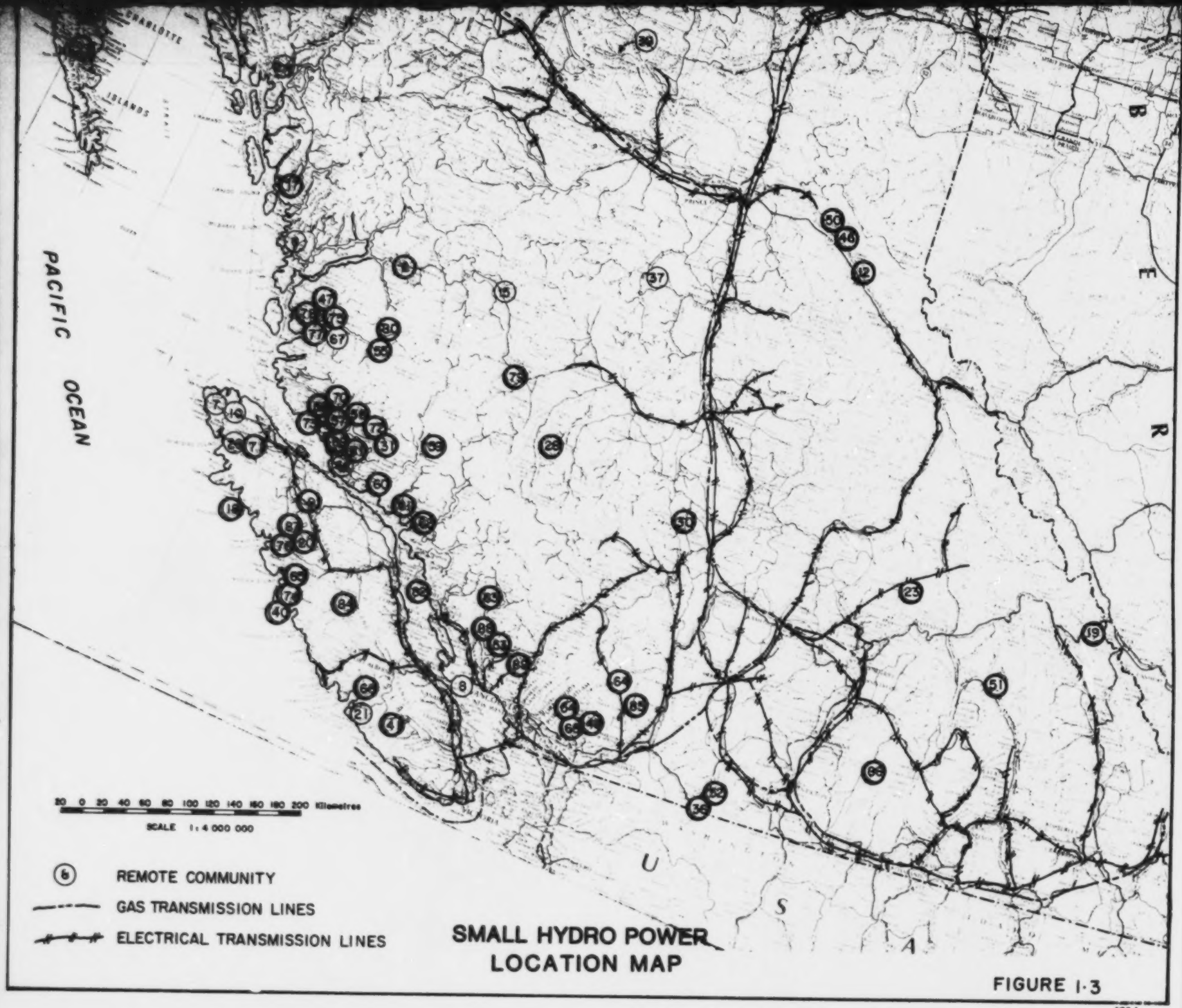
LIST OF REMOTE COMMUNITIES

RANK	POPULATION	COMMUNITY	RANK	POPULATION	COMMUNITY
1	3175	MASSET	47	70	ROSS INLET
2	3047	BELLA COOLA	48	67	GILFORD ISLAND
3	3000	SANDSPIT	49	55	STAVE LAKE
4	1850	CASSIAR	50	53	LONGWORTH
5	1456	STEWART	51	50	TROUT LAKE
6	1414	BELLA BELLA	52	50	EASTGATE
7	650	HOLBERG RNB	53	45	HARBOUR INLET LOGGING DIV.
8	587	LASQUETI ISLAND	54	45	PITT LAKE
9	548	UCONS	55	45	MACHMELL
10	476	HOLBERG	56	45	ACTEON SOUND
11	475	ATLIN	57	45	TIMFOR
12	475	BONE CREEK / CRESCENT SPUR	58	45	WAKEMAN SOUND
13	463	KITKATLA	59	45	KNIGHT INLET
14	450	BEASE LAKE	60	45	TOM BROWN LAKE
15	372	ANAHIM LAKE	61	45	PHILLIPS ARM
16	350	TELEGRAPH CREEK	62	45	SUATAM RIVER
17	314	KLEMTU	63	45	BECHELL CREEK
18	300	KYUQUOT	64	45	FORT DOUGLAS (HARRISON)
19	270	FIELD	65	45	NOOTKA BAY (NOOTKA)
20	251	VERNON CAMP	66	45	BARCLAY DIV.(KILSONAN)
21	250	BANFIELD	67	45	QUIKENO
22	250	ISKUT/EDDONTENAJON	68	45	BOULDER BAY
23	217	SEYMOUR ARM	69	45	SCOTT COVE
24	214	HARTLEY BAY	70	45	SEYMOUR INLET
25	208	TAKLA	71	45	CLEAGH CREEK
26	195	NAHATTA RIVER	72	45	KINGCOME INLET (UNCHNOCK)
27	182	SEWELL INLET	73	45	BRURY INLET
28	175	NEKAIAH VALLEY INDIAN BAND	74	44	GREENWOOD CAMP
29	170	FORT BABINE IR 06	75	41	KILBELLA BAY
30	150	BIG BAR/JESMOND CREEK AREA	76	40	KUCHATLAHT
31	147	KINGCOME INLET	77	40	NICKNAQUET
32	145	FORT WARE	78	40	SHOTBOLT
33	130	ERICKSON GOLD MINE VILLAGE	79	37	TATLA LAKE
34	125	TIDE LAKE	80	32	SHEENAHANT
35	123	LOWER POST	81	32	SIMOON SOUND
36	121	MANNING PROVINCIAL PARK	82	31	SAVARY ISLAND
37	113	HAZEG INDIAN BAND	83	30	BAKER MINE CAMP
38	100	JISKATLA	84	30	WESTERN MINES (MYRA FALLS)
39	98	PORTAGE (HANCUT)	85	30	HORNET
40	90	HESQUIAHT	86	26	CHRISTIAN VALLEY
41	81	HITINAHT	87	25	BARR CREEK
42	80	TOAD RIVER AREA	88	25	EARLS CREEK
43	80	SCOTTY GOLD	89	19	NCNAB CAMP
44	78	PROPHET RIVER	90	17	MEZIADIN LAKE - HIGHWAYS
45	77	BERNARDEN LANDING	91	17	BOB QUINN LAKE
46	74	PENNY	92	12	GOOD HOPE LAKE - HIGHWAYS

NOTES: 1. Total Remote Community Population = 25,451
SOURCES: Statistics Canada, Regional Districts, B.C. Hydro, Dept. of Indian Affairs, Private Companies, Private Citizens.
2. For Community Locations see Figure 1

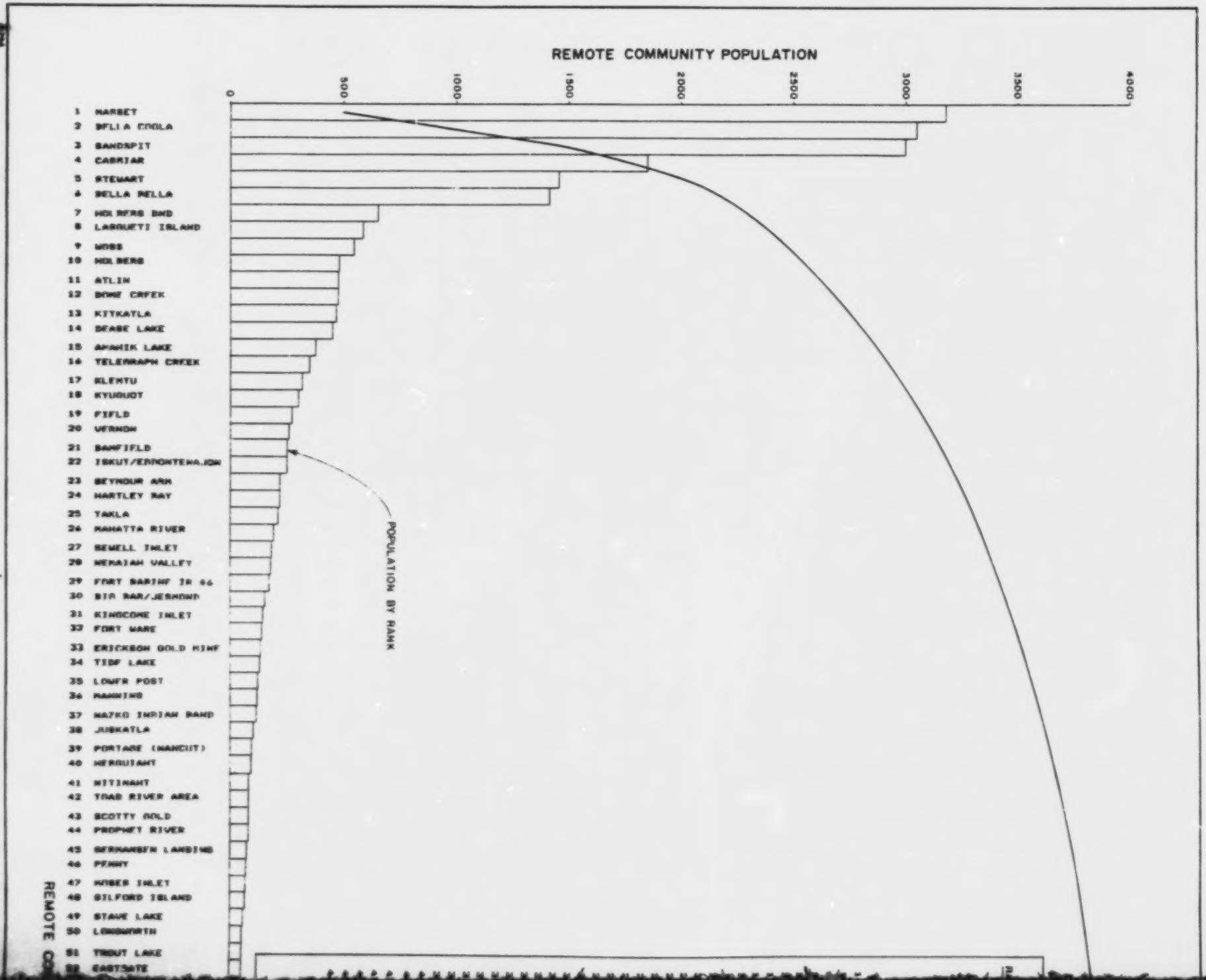
J.NG MARCH 1963





SMALL HYDRO POWER LOCATION MAP

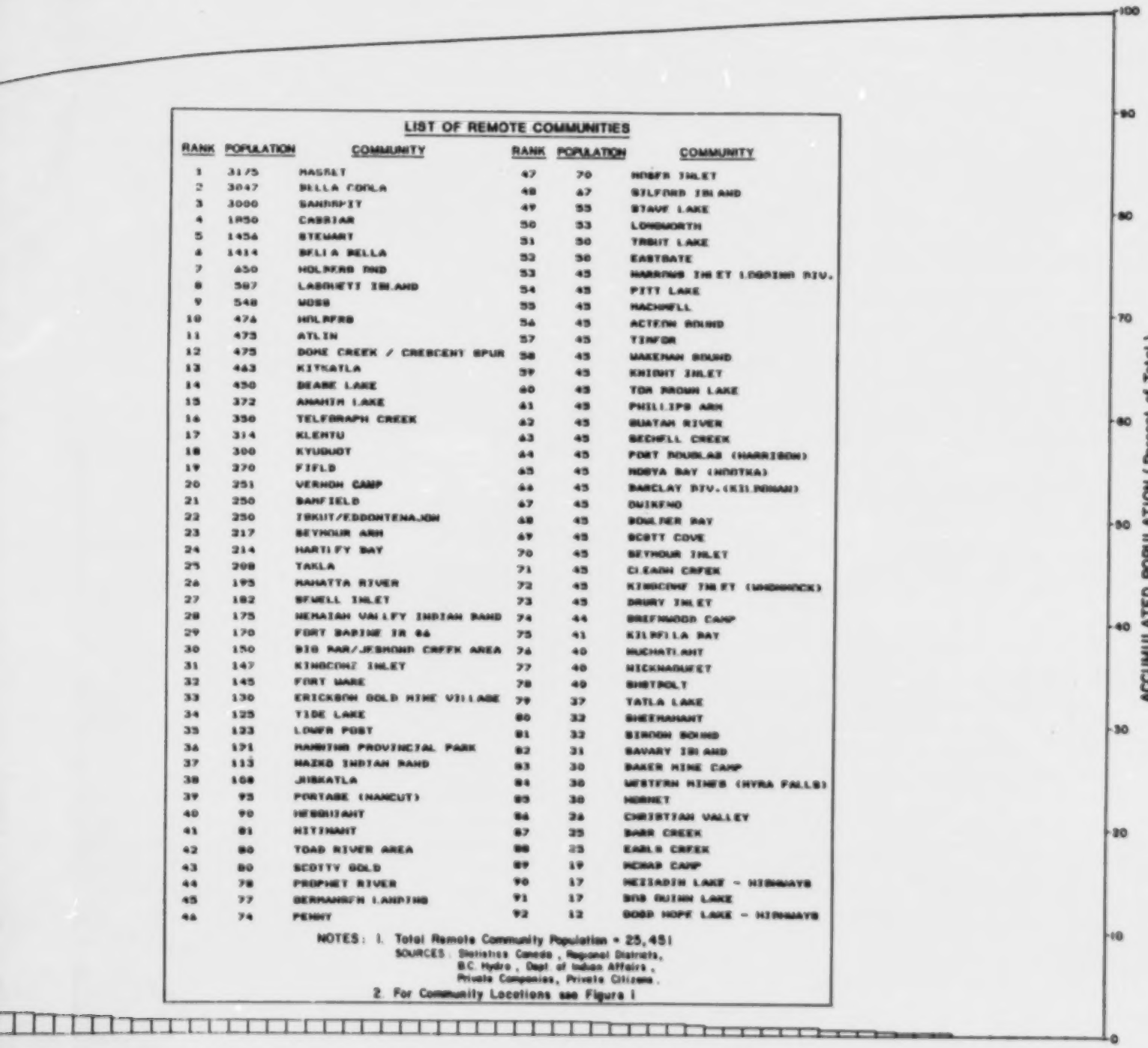
FIGURE 1·3


REMOTE COMMUNITY POPULATION
0
500
1000
1500
2000
2500
3000
3500
4000
1 MARBET
2 BELLA COOLA
3 SANDSPIT
4 CABRIAR
5 STEWART
6 BELLA BELLA
7 HOLMES END
8 LARGUETI ISLAND
9 WOSS
10 HOLBERG
11 ATLIN
12 BOWE CREEK
13 KITKATLA
14 DEASE LAKE
15 APAMIK LAKE
16 TELEGRAPH CREEK
17 KLEMTU
18 KYUQUOT
19 FIELD
20 VERNON
21 BANFIELD
22 ISKUT/ERRONTEMAJON
23 SEYMOUR ARM
24 HARTLEY BAY
25 TAKLA
26 MAHATTA RIVER
27 SEWELL INLET
28 MEKAIAH VALLEY
29 FORT BABINE IR #6
30 BIG BAR/JESMOND
31 KINCOME INLET
32 FORT WARE
33 ERICKSON GOLD MINE
34 TIDE LAKE
35 LOWER POST
36 MANNING
37 WAYKO INDIAN BAND
38 JUSKATLA
39 PORTAGE (NANCUT)
40 HERRIOTANT
41 NITINAHT
42 TOAD RIVER AREA
43 SCOTTY GOLD
44 PROPHET RIVER
45 GERMANSEN LANDING
46 PENNY
47 MOBER INLET
48 GILFORD ISLAND
49 STAVE LAKE
50 LONGWORTH
51 TROUT LAKE
52 EASTGATE
POPULATION BY RANK
REMOTE CO

LIST OF REMOTE COMMUNITIES

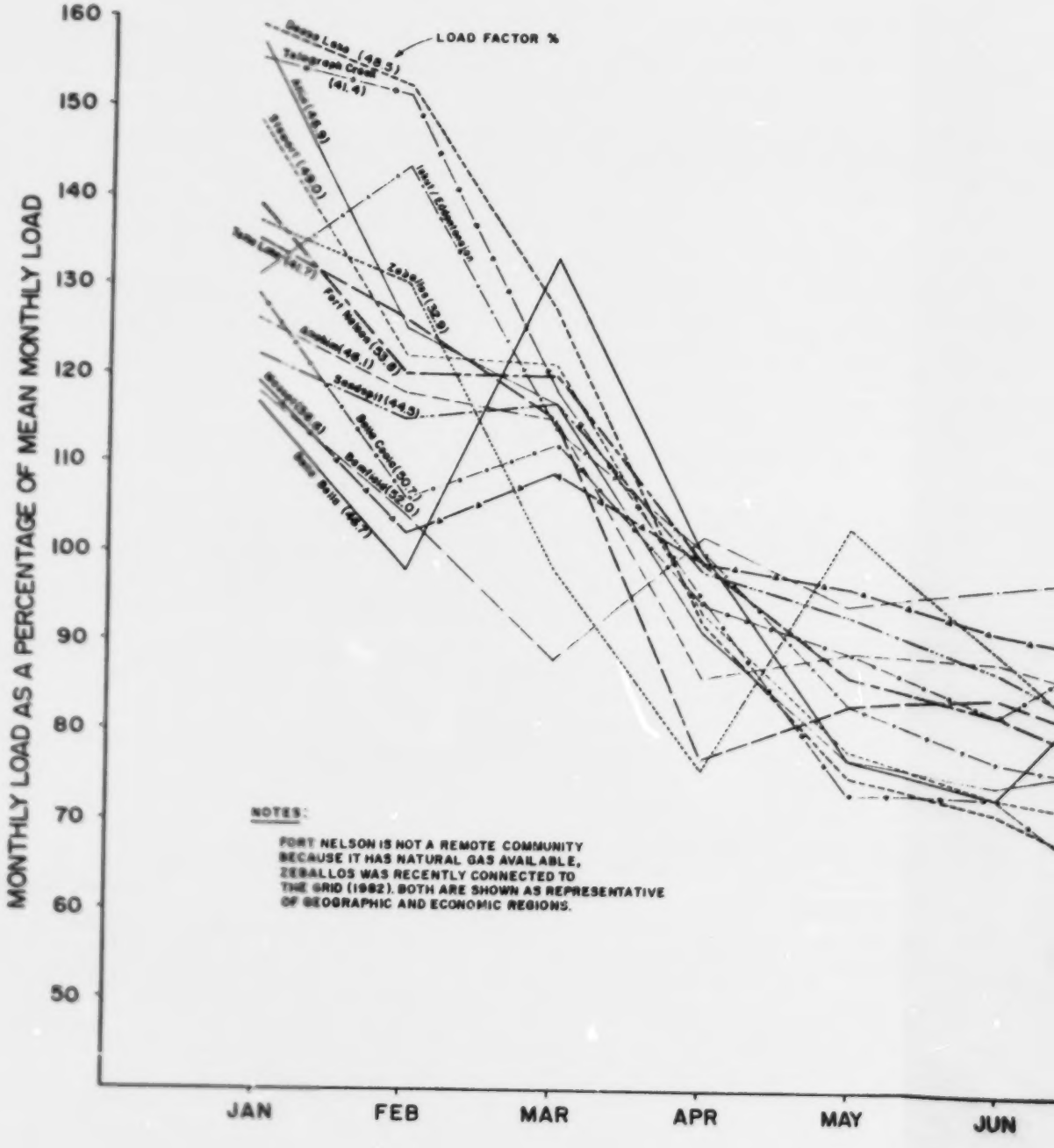
RANK	POPULATION	COMMUNITY	RANK	POPULATION	COMMUNITY
1	3175	MASSET	47	70	HOOPER INLET
2	3047	BELLA COOLA	48	67	GILFORD ISLAND
3	3000	SANDSPIT	49	55	STAVE LAKE
4	1850	CABRIAR	50	53	LONGWORTH
5	1456	STEWART	51	50	TROUT LAKE
6	1414	BELLA BELLA	52	50	EASTGATE
7	650	HOLBERG IND	53	45	HARRISON INLET LOGGING DIV.
8	587	LASQUETTI ISLAND	54	45	PITT LAKE
9	548	MOSS	55	45	MACHMELL
10	476	HOLBERG	56	45	ACTEON SOUND
11	475	ATLIN	57	45	TINFOR
12	475	DOME CREEK / CRESCENT SPUR	58	45	HAKEMAN SOUND
13	463	KITKATLA	59	45	KNIGHT INLET
14	450	BEARE LAKE	60	43	TOM BROWN LAKE
15	372	ANAHIM LAKE	61	43	PHILLIPS ARM
16	350	TELEGRAPH CREEK	62	43	BUSTAN RIVER
17	314	KLEMTU	63	43	BECHELL CREEK
18	300	KYUQUOT	64	43	PORT DOUGLAS (HARRISON)
19	270	FIELD	65	43	HOOYA BAY (HOOTKA)
20	251	VERNON CAMP	66	43	BARCLAY DIV.(KILDONAN)
21	250	BANFIELD	67	43	QUIRENO
22	250	IBKUIT/EDDONTENAJON	68	43	BOULDER BAY
23	217	SEYMOUR ARM	69	43	SCOTT COVE
24	214	HARTLEY BAY	70	43	SEYMOUR INLET
25	208	TAKLA	71	43	CLEARH CREEK
26	195	NAHATTA RIVER	72	43	KINGCOME INLET (WADHANCK)
27	182	BELL INLET	73	43	DRURY INLET
28	175	NEMAIAH VALLEY INDIAN BAND	74	44	GREENWOOD CAMP
29	170	FORT BABINE IR #6	75	41	KILMELLA BAY
30	150	BIG BAR/JESMOND CREEK AREA	76	40	NUCHATLAHT
31	147	KINGCOME INLET	77	40	HICKNAGWET
32	145	FORT WARE	78	40	BIRTROLT
33	130	ERICKSON GOLD MINE VILLAGE	79	37	TATLA LAKE
34	125	TIDE LAKE	80	32	SHEEMAHANT
35	123	LOWER POST	81	32	BIRDOM SOUND
36	121	MANNING PROVINCIAL PARK	82	31	SAVARY ISLAND
37	113	HAZKO INDIAN BAND	83	30	BAKER MINE CAMP
38	108	JIBKATLA	84	30	WESTERN MINES (HYRA FALLS)
39	95	PORTAGE (NANCUT)	85	30	HORNET
40	90	HESQUIAHT	86	26	CHRISTIAN VALLEY
41	81	HITINAHT	87	25	BARR CREEK
42	80	TOAD RIVER AREA	88	25	EAGLE CREEK
43	80	SCOTTY GOLD	89	19	NOMAD CAMP
44	78	PROPHET RIVER	90	17	MEZIADIN LAKE - HIGHWAY8
45	77	GERMANSEN LANDING	91	17	BIG GUICH LAKE
46	74	PENNY	92	12	GOOD HOPE LAKE - HIGHWAY8

NOTES: 1. Total Remote Community Population = 25,451
SOURCES: Statistics Canada, Regional Districts, B.C. Hydro, Dept. of Indian Affairs, Private Companies, Private Citizens.
2. For Community Locations see Figure 1



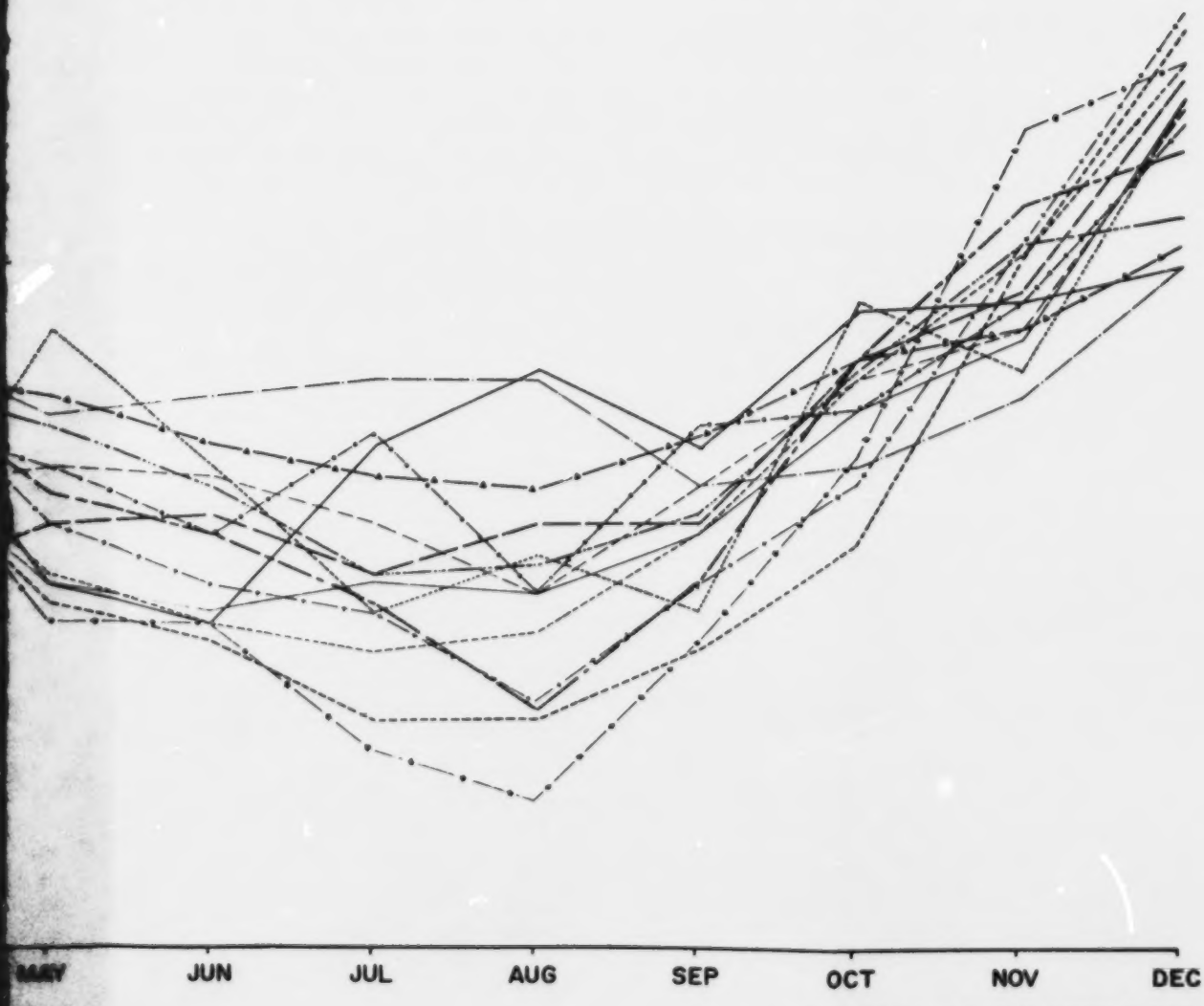
ENERGY PROFILE SUMMARY
POPULATION

FIGURE 2



NOTES:

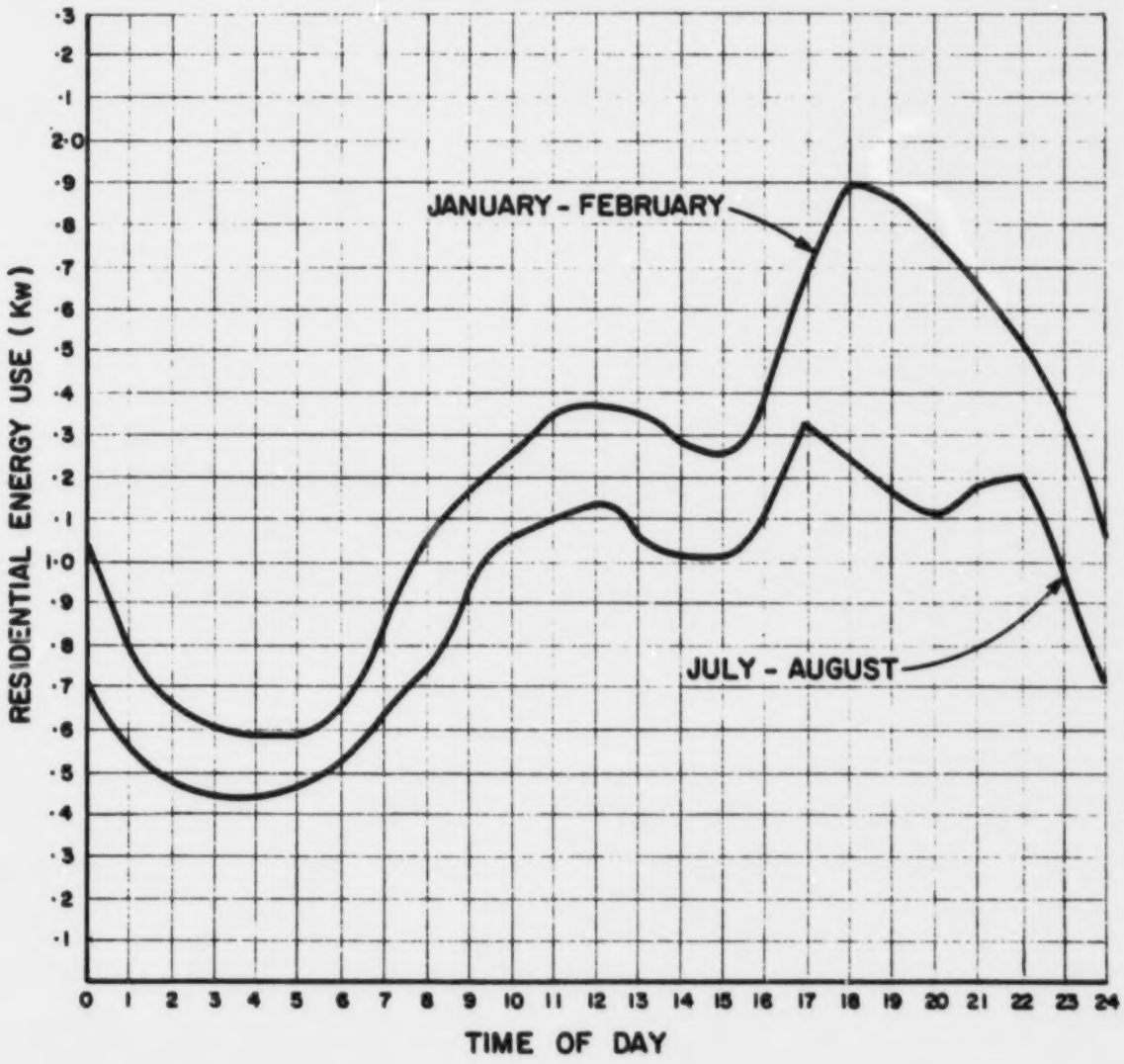
FORT NELSON IS NOT A REMOTE COMMUNITY BECAUSE IT HAS NATURAL GAS AVAILABLE, ZEBALLOS WAS RECENTLY CONNECTED TO THE GRID (1982). BOTH ARE SHOWN AS REPRESENTATIVE OF GEOGRAPHIC AND ECONOMIC REGIONS.



ELECTRICAL LOAD PATTERNS FOR
REMOTE COMMUNITIES SERVED BY BC HYDRO

FIGURE 8

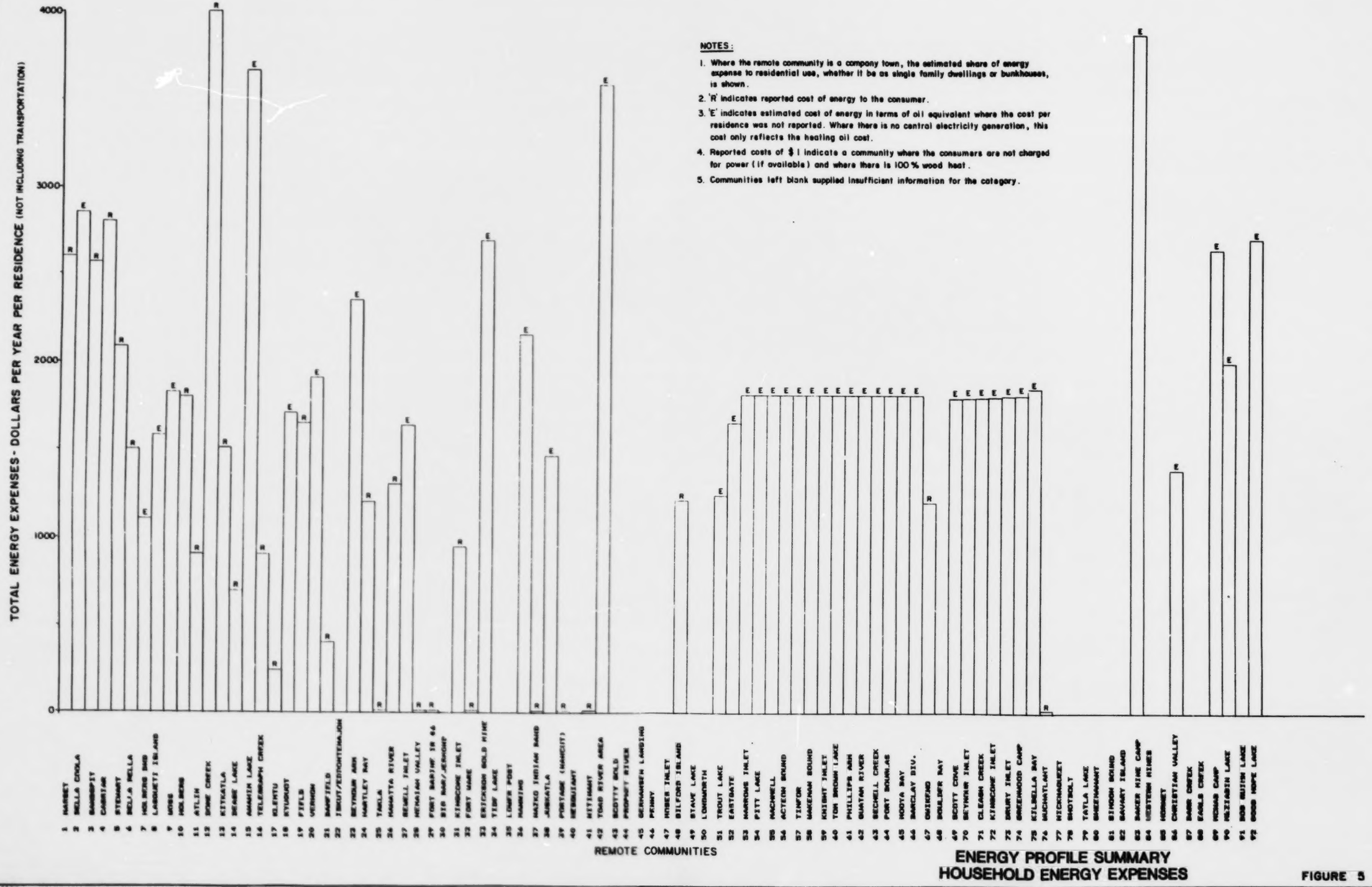
EXPECTED VARIATIONS FROM MEAN	WINTER	SUMMER
METRO VANCOUVER	- 5 %	- 2 %
FRASER VALLEY	- 3 %	- 2 %
CENTRAL INTERIOR	- 11 %	- 16 %
SOUTHERN INTERIOR	+ 11 %	+ 8 %
VANCOUVER ISLAND	+ 10 %	+ 8 %



SOURCE : B.C. HYDRO

DAILY ELECTRICAL LOAD CURVE

FIGURE 4

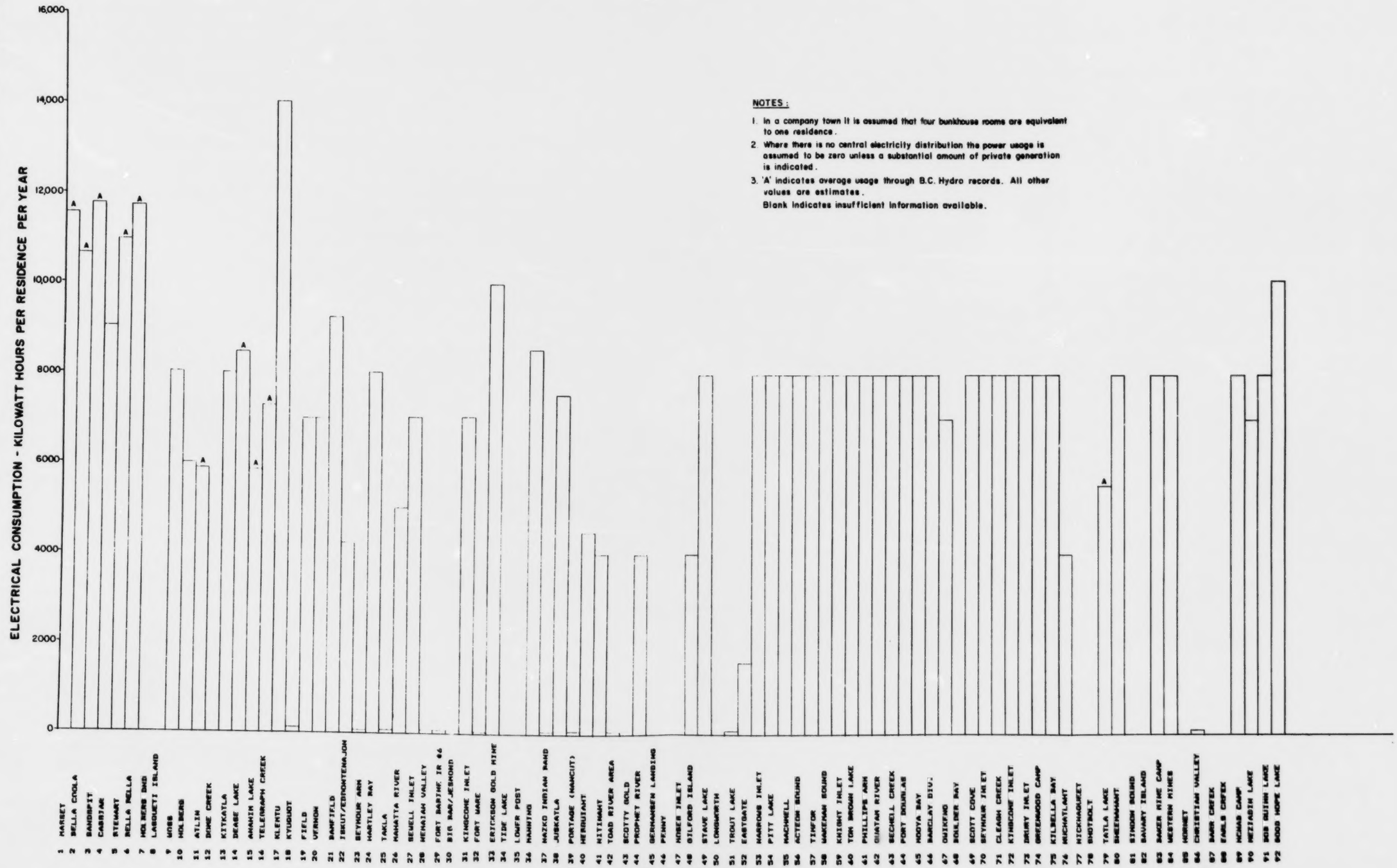


NOTES:

1. Where the remote community is a company town, the estimated share of energy expense to residential use, whether it be as single family dwellings or bunkhouses, is shown.
2. 'R' indicates reported cost of energy to the consumer.
3. 'E' indicates estimated cost of energy in terms of oil equivalent where the cost per residence was not reported. Where there is no central electricity generation, this cost only reflects the heating oil cost.
4. Reported costs of $1 indicate a community where the consumers are not charged for power (if available) and where there is 100% wood heat.
5. Communities left blank supplied insufficient information for the category.

ENERGY PROFILE SUMMARY
HOUSEHOLD ENERGY EXPENSES

FIGURE 5



NOTES :

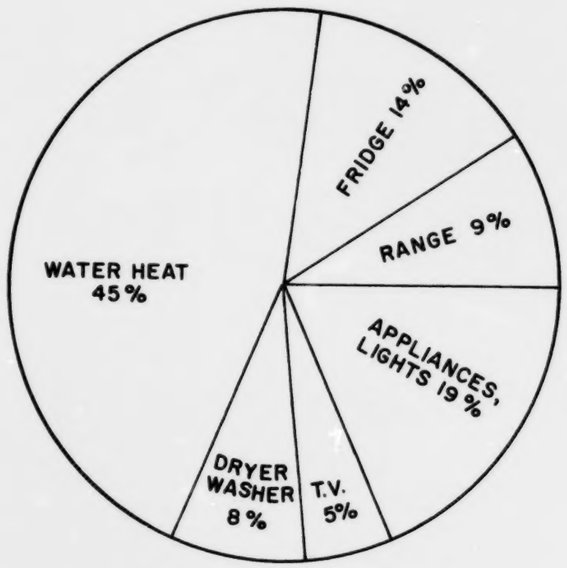
1. In a company town it is assumed that four bunkhouse rooms are equivalent to one residence.
2. Where there is no central electricity distribution the power usage is assumed to be zero unless a substantial amount of private generation is indicated.
3. 'A' indicates average usage through B.C. Hydro records. All other values are estimates.
   Blank indicates insufficient information available.

ENERGY PROFILE SUMMARY
HOUSEHOLD ELECTRICAL CONSUMPTION

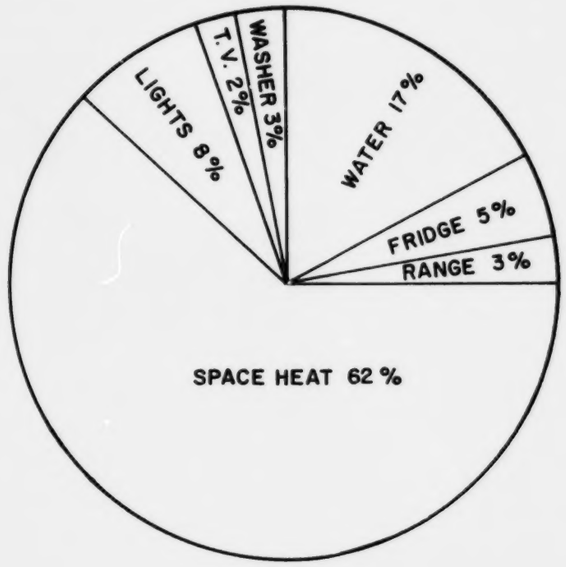
FIGURE 6

3294

JNG MAY 1983



A. AVERAGE WELL INSULATED DWELLING, ELECTRIC WATER HEAT BUT NO SPACE HEAT



B. AVERAGE WELL INSULATED DWELLING (R20 ceiling, R12 walls) ELECTRIC WATER AND SPACE HEAT

NOTE:

Space heat component ranges from 62% in the Lower Mainland to 70% in the Central Interior.

Source: B.C. Hydro

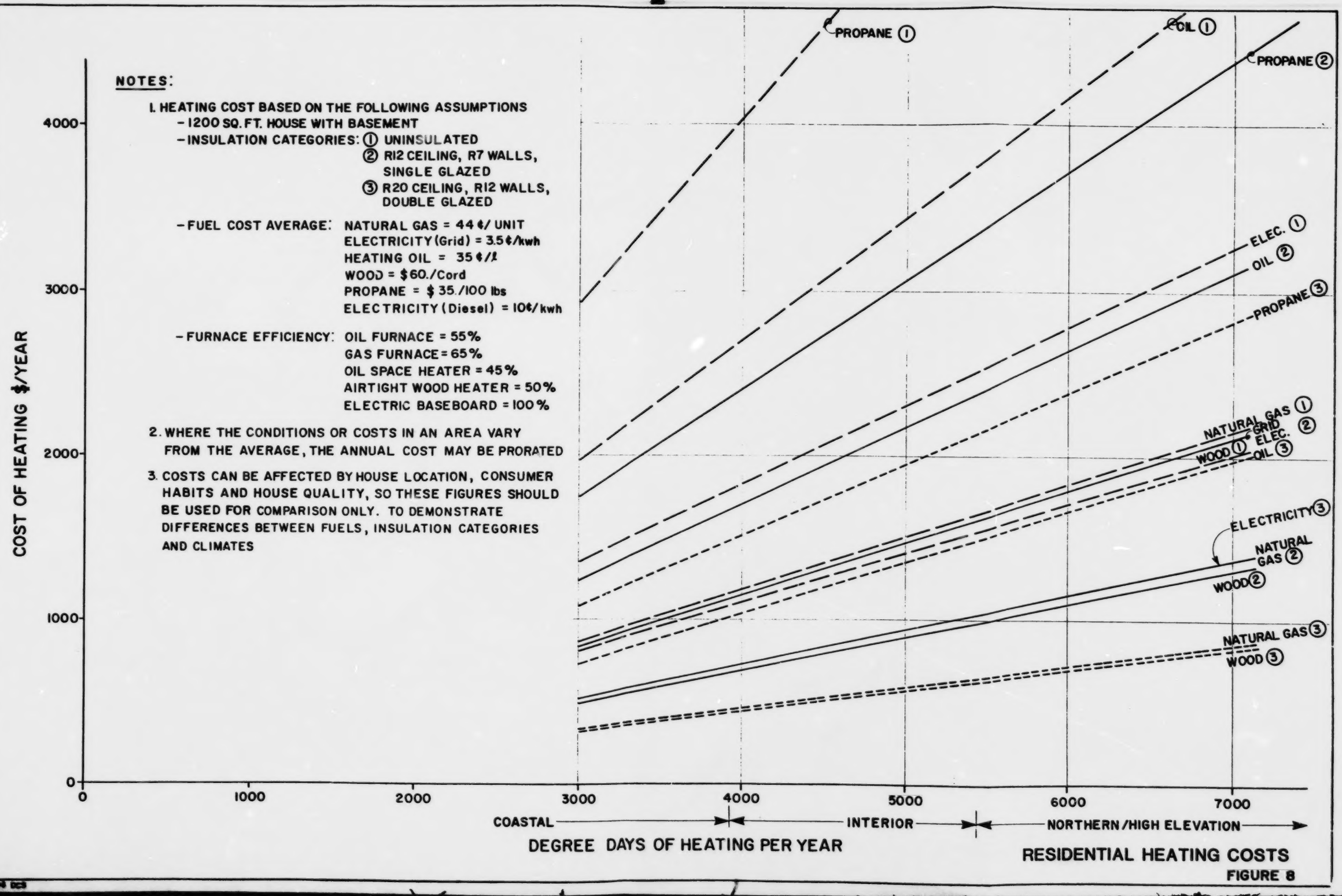
ELECTRICAL DEMAND BREAKDOWN

FIGURE 7

DCS 5284

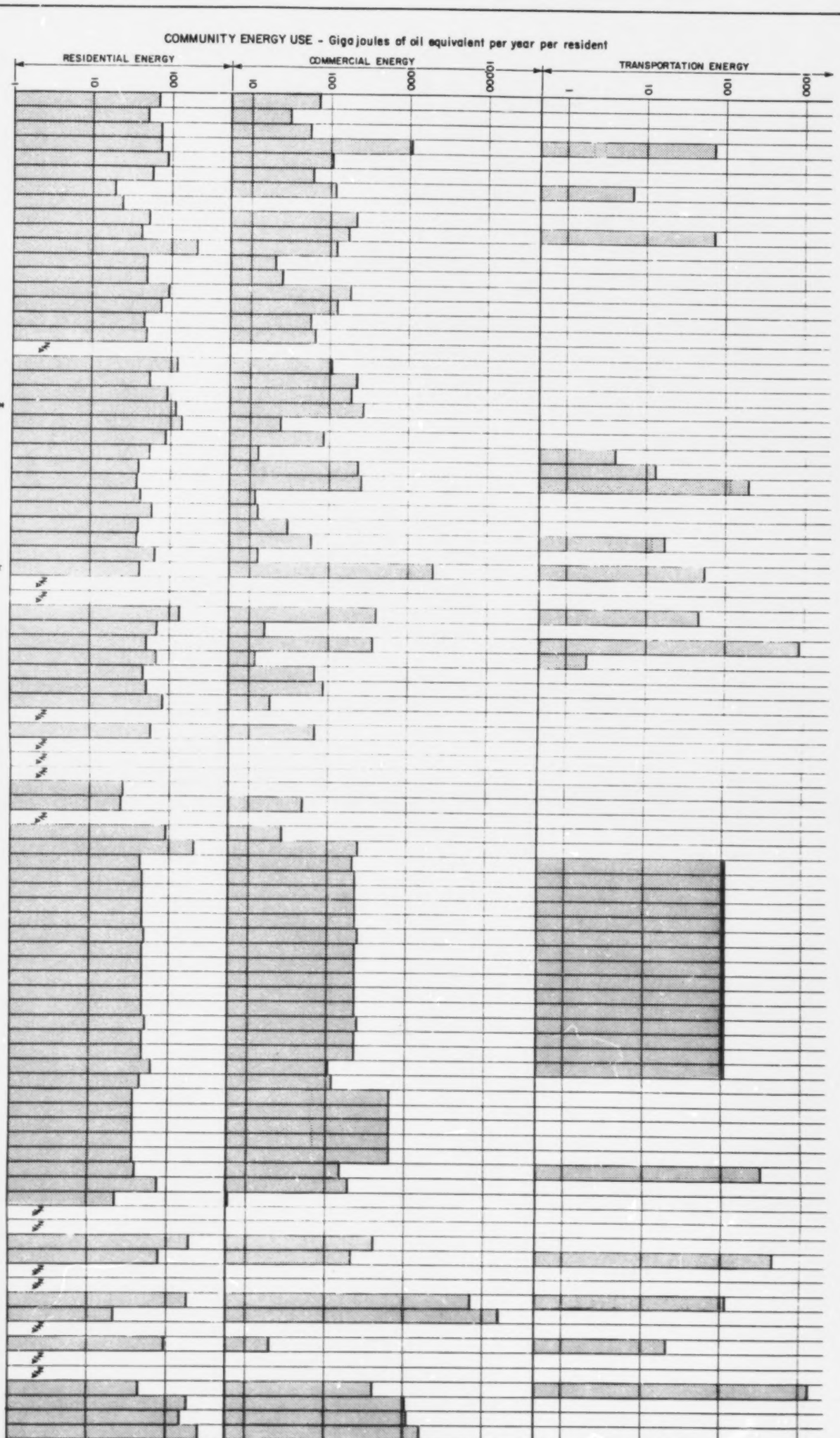
NOTES:

1. HEATING COST BASED ON THE FOLLOWING ASSUMPTIONS
   - 1200 SQ. FT. HOUSE WITH BASEMENT
   - INSULATION CATEGORIES: ① UNINSULATED
     ② R12 CEILING, R7 WALLS, SINGLE GLAZED
     ③ R20 CEILING, R12 WALLS, DOUBLE GLAZED
   - FUEL COST AVERAGE: NATURAL GAS = 44 ¢/ UNIT
     ELECTRICITY (Grid) = 3.5 ¢/kwh
     HEATING OIL = 35 ¢/ℓ
     WOOD = $60./Cord
     PROPANE = $ 35./100 lbs
     ELECTRICITY (Diesel) = 10¢/kwh
   - FURNACE EFFICIENCY: OIL FURNACE = 55%
     GAS FURNACE = 65%
     OIL SPACE HEATER = 45%
     AIRTIGHT WOOD HEATER = 50%
     ELECTRIC BASEBOARD = 100%
2. WHERE THE CONDITIONS OR COSTS IN AN AREA VARY FROM THE AVERAGE, THE ANNUAL COST MAY BE PRORATED
3. COSTS CAN BE AFFECTED BY HOUSE LOCATION, CONSUMER HABITS AND HOUSE QUALITY, SO THESE FIGURES SHOULD BE USED FOR COMPARISON ONLY. TO DEMONSTRATE DIFFERENCES BETWEEN FUELS, INSULATION CATEGORIES AND CLIMATES



RESIDENTIAL HEATING COSTS

FIGURE 8



NOTES:

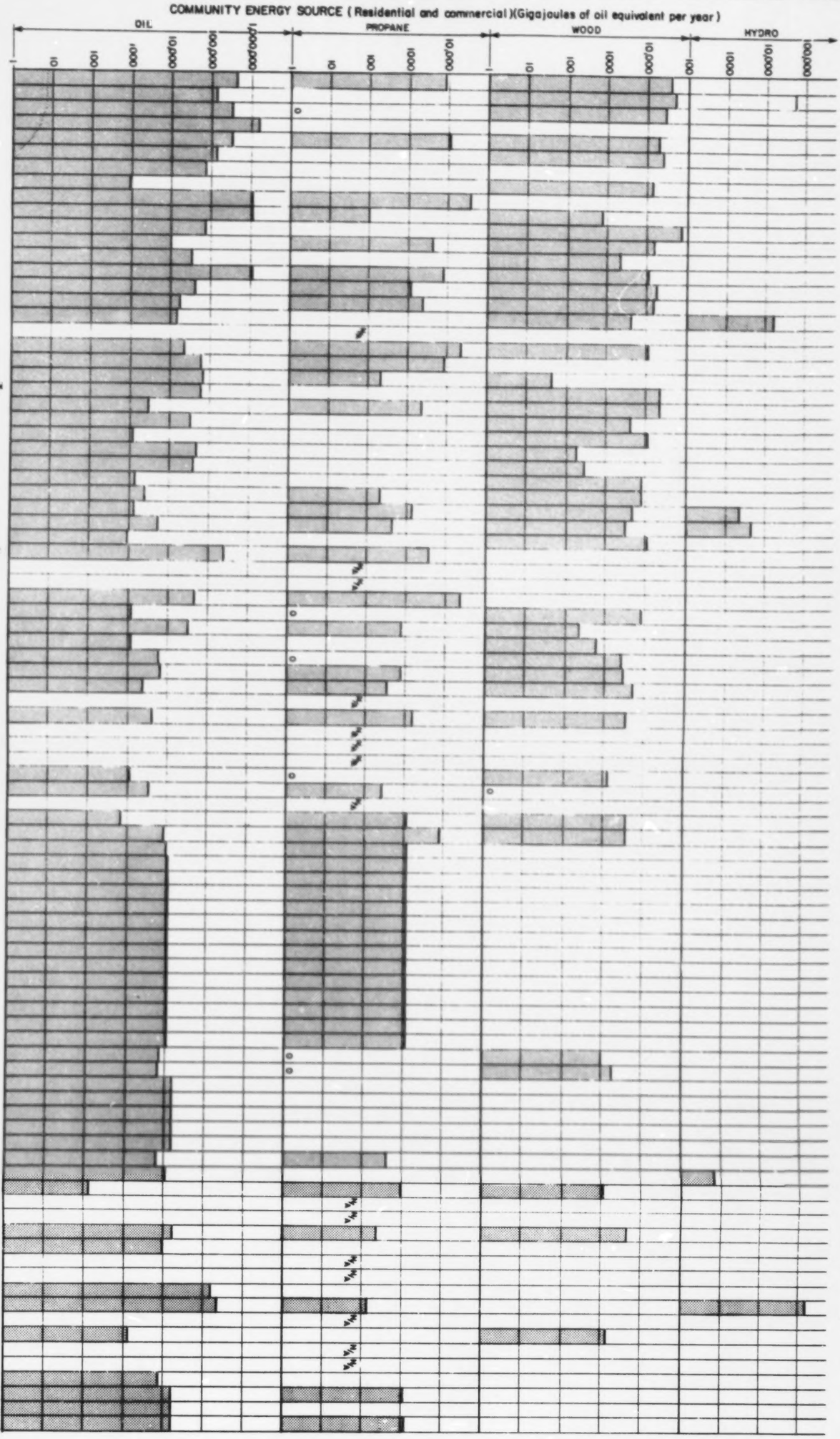
1. Residential Energy includes electricity, heating and cooking. Commercial Energy includes community buildings and industrial buildings.
2. Electrical Energy from oil sources has been converted to the amount of oil required to produce it with a diesel generator.
3. Numerical values are available in Table A 31

REMOTE COMMUNITIES

ENERGY PROFILE SUMMARY

TOTAL ENERGY USE

FIGURE 9



ENERGY PROFILE SUMMARY
EXISTING COMMUNITY ENERGY SUPPLIES

FIGURE 10

COMMUNITY CONSERVATION & RENEWABLE ENERGY POTENTIAL (Gigajoules of oil equivalent per year)

WASTE HEAT — 100,000 / 10,000 / 1000 / 100

SOLAR — 1000 / 100 / 10

MANAGEMENT — 1,000,000 / 100,000 / 10,000 / 1000 / 100

WIND — 10,000 / 1000 / 100

HYDRO POWER — 100,000 / 10,000 / 1000 / 100

WOOD — 100,000 / 10,000 / 1000 / 100

INSULATION — 10,000 / 1000 / 100 / 10

1 HARRIET
2 BELLA COOLA
3 BANDSPIT
4 CARRIER
5 STEWART
6 BELLA BELLA
7 HOLBERG IND
8 LARGUETT ISLAND
9 WOSS
10 HOLBERG
11 ATLIN
12 DOME CREEK
13 KITKATLA
14 BEARE LAKE
15 ANNAIR LAKE
16 TELEGRAPH CREEK
17 KLEMTU
18 KYUQUOT
19 FIELD
20 VERNON
21 BANFIELD
22 IBKUT/EDRONTEMAJON
23 SEYMOUR ARM
24 HARTLEY BAY
25 TAKLA
26 NAMATTA RIVER
27 SEWELL INLET
28 NEMAIAH VALLEY
29 FORT BABINE IR #6
30 BIG BAR/JESMOND
31 KINGCOME INLET
32 FORT HARE
33 ERICKSON GOLD MINE
34 TIDE LAKE
35 LOWER POST
36 HAGWILGET
37 HAZED INDIAN BAND
38 JUSKATLA
39 PORTAGE (HANCUT)
40 HEDLEY ART
41 HITIMAHT
42 TOAD RIVER AREA
43 SCOTTY GOLD
44 PROPHET RIVER
45 BERNARDEEN LANDING
46 PENNY
47 HOMES INLET
48 BILFORD ISLAND
49 STAVE LAKE
50 LONGSMITH
51 TROUT LAKE
52 EGEGATE
53 NARROWS INLET
54 PITT LAKE
55 RACHEL
56 ACTEON SOUND
57 TINFOR
58 WATERMAN SOUND
59 KNIGHT INLET
60 TOM BROWN LAKE
61 PHILLIPS ARM
62 QUATAM RIVER
63 BECHELL CREEK
64 PORT DOUGLAS
65 HOOYA BAY
66 BARCLAY DIV.
67 QUIRKMO
68 BOULDER BAY
69 SCOTT COVE
70 SEYMOUR INLET
71 CLEARH CREEK
72 KINGCOME INLET
73 DRURY INLET
74 BREEMOOD CAMP
75 KILDELLA BAY
76 KECHATLAHT
77 HITCHSNEEST
78 SHOTBOLT
79 TATLA LAKE
80 SWEETHART
81 SIMOOM SOUND
82 SAVARY ISLAND
83 BAKER MINE CAMP
84 WESTERN KINES
85 HORNET
86 CHRISTIAN VALLEY
87 BABA CREEK
88 EAGLE CREEK
89 KOMAS CAMP
90 MEZIADIN LAKE
91 BIG SWIMM LAKE
92 GOOD HOPE LAKE

REMOTE COMMUNITIES

NOTES:
1. For numerical values of fuel savings, see Table A 3-1.
2. 1 Gigajoules ≃ 25 litres of oil.
3. For the present worth of the fuel savings over 20 years, see Table 7-5

ENERGY PROFILE SUMMARY CONSERVATION AND RENEWABLE ENERGY POTENTIAL

FIGURE II

APPENDIX 1

Community Energy Profiles

APPENDIX 1
COMMUNITY ENERGY PROFILES

METHODOLOGY FOR CALCULATING COMMUNITY ENERGY PROFILES

1 INTRODUCTION

One of the main objectives of the British Columbia Overview Study was to develop profiles of community energy use. The background information was obtained through the questionnaires and sometimes telephone calls to remote communities. Additional information was obtained through B C Hydro and from Indian and Northern Affairs Canada. The resulting data formed a data base which was manipulated with a computer program which calculated various energy parameters.

The energy parameters were assembled in tabular form as shown on Table A1 at the end of this section. In the report, Figures 2, 5, 6, 9, 10 and 11 are graphical presentations of portions of Table A1.

2 METHODOLOGY

The methodology for calculating information shown under the various headings of Table A1 is described below. Occasionally the information available was not consistent for each community, so additional sources of information were utilized, as described below.

	Heading	Description
1.	**Name of Community**	Usually the official place name is used, but occasionally camps are listed by the name of an adjoining geographical feature, where no official name exists.
2.	**Population**	The population reported on the questionnaire is usually used, made up of permanent population plus a prorated portion of the seasonal variation e.g. where a camp operates for 9 months of the

	Heading	Description
		year, 75 percent of the peak population is used. Where seasonal variation is relatively small, 50 percent of the range is added to the basic population. Other sources of population information were Regional Districts and Statistics Canada. The information is plotted on Figure 2.
3.	**Annual Cost**	This column not used.
4.	**Annual Electricity** GJ X 10	This represents the total electricity generated by the central electricity system converted into the equivalent amount of oil at the 32 percent average efficiency of a diesel generator.

Note:
- 1.0 GJ (gigajoule) is equivalent to about 25 litres of oil (diesel or heating).
- The figures shown in the table as GJ x 10 should be multiplied by 10 to get the correct amount.
- All energy values have been converted into the equivalent amount of energy as oil before burning.

Household Information

5.	**Number of Homes**	The reported number of residences from questionnaires is used. Where the dwellings are not single family, such as a camp bunkhouse, it is assumed the 4 rooms make up one dwelling.
6.	**% Well Insulated**	The reported percentage of dwellings well insulated (at least to standards for new construction) is shown based on questionnaire response.

	Heading	Description
7.	**Energy Cost**	The reported average annual energy cost per household is used. Where not reported, these costs have been estimated based on available data. Where $1 is shown, this indicates a low level of electric service (not charged to customer) and a wood heated house, typically found at some native communities. The information is plotted in Figure 5.
8.	**Electrical kW.h**	The average annual kilowatt-hours of electricity use per household is shown. The number is based on B C Hydro reports (for communities served by B C Hydro). For other communities, an average is estimated based on the total generation attributable to domestic use or the expected normal for a community with similar economic and geographic circumstances. The information is plotted in Figure 6.
9.	**% Wood Heated**	The reported percentage of homes heated with wood is shown. This statistic is singled out as it represents the most common source of renewable energy in use.
10.	**Degree Days**	The degree days of heating between the daily mean and 18°C is reported, based on Atmospheric Environment Service figures, or interpolations from adjacent stations. There is good regional representation for this variable which is used in the heat cost calculations.

	Heading	Description
11.	**Transport Energy (GJ x 10)**	The reported quantity of fuel used in vehicles or boats is shown converted from litres or gallons per year. Usually this figure was only available from industrial communities, and estimates for other communities cannot be made without additional information.
12.	**Residential Energy (GJ x 10)**	The total of residential space heat requirements (allowing for furnace efficiency, building types, insulation levels and climate zone) is added to the residential electrical requirements (converted from the kilowatt-hours per year into the fuel required to generate).
13.	**Commercial Energy (GJ x 10)**	The reported and/or estimated use of non-residential energy (commercial buildings, community buildings and industrial buildings) is shown allowing for both electrical use and space heat.
		The transportation, residential and commercial energy uses on a per capita basis are plotted on Figure 9.

Annual Existing Energy (GJ x 10)

14.	**Oil**	Total oil consumption for electric and space heat uses for residential and commercial buildings is shown, based on reported use and the proportion of oil heated homes.

	Heading	Description
15.	**Propane**	Total propane usage based on the questionnaire response is shown (converted to an oil equivalent).
16.	**Wood**	Total usage of wood for residential space heat is shown (converted to an oil equivalent).
17.	**Hydro**	Total annual energy utilized from existing small hydro power plants is shown. The energy is converted from kilowatt hours to the equivalent amount of oil (in gigajoules) as if the generation had been with a diesel generator.
18.	**Wind**	Total energy available from wind turbines is shown. Although there are some wind turbines at remote communities, their energy contribution is too small to register relative to the other sources of energy.
19.	**Solar**	The total solar panel contribution is too small to register against other forms of energy.
20.	**Others**	The column is saved for other forms of energy. Possible energy sources would include kerosene, naptha and gasoline. Steam heat derived from oil is shown at some communities as it represents a more efficient energy use.
		The above existing energy sources are plotted on Figure 10.

Annual Potential Energy From (in GJ x 10)

21.	**Insulation**	The potential energy savings from upgrading residential insulation are shown. Factors evaluated included number of homes well insulated, degree

	Heading	Description
		days, housing style and existing insulation level. It was assumed that realistic energy savings of half the difference between the existing and the next higher insulation level were possible, and that only wood frame homes described as "not well insulated" would be included.
22.	**Wood**	Wood is usually the most readily available form of renewable energy. The energy shown is based on the number of homes not using wood converting to wood heat.
23.	**Hydro**	The assessment of potential energy from small hydro sources was done in a number of ways. Most larger communities, those served by B C Hydro, were catalogued in Reference 4 and the potential energy available is shown. Other communities are located near potential on-grid sites identified in the above study and these energies are also reported. The remaining communities, if the population was greater than 50, were studied on available mapping to determine the magnitude of any small hydro sites nearby. Communities with less than 50 persons were studied on the basis of the probability of developing a feasible hydro site nearby. Factors evaluated included the power requirement (which gives the maximum developable energy), the economic distance for locating a site (which increases with power requirement), and the hydrology and topography within the economic distance (which indicates whether the chances of finding a site nearby are good or poor).

	Heading	Description
24.	**Wind**	Potential energy from wind power must be based on a judgement of what is practical for the community. The criteria used include a wind speed over 16 km/h and an energy availability of at least 25 percent of installed capacity over the year. Exposed coastal areas have been selected, with an installed capacity based on the average residential requirement, and an energy availability of 25 percent to 45 percent of the installed capacity, depending on location.
25.	**Management**	Most communities could benefit from energy management. It is assumed that 10 percent of the commercial and residential energy use could be saved with better energy management. The many forms of energy management have been described in Section 5.1.2 and Section 5.1.3.
26.	**Solar**	Solar energy use is mainly feasible for domestic hot water heating. There is little difference in energy available across British Columbia and household requirements are similar. It is assumed that 50 percent of the hot water heat requirement (about 5.2 GJ/year/house) can be saved with solar energy.
27.	**Waste Heat**	Waste heat recovery is mainly concerned with harnessing the cooling water jacket energy from a diesel electric generator. Typically 40 percent of the energy input can be recovered. The logistics of transporting the energy to buildings for space heat have not been considered as the information was usually not available. In general, the larger the

Heading	Description

source of waste heat, the further transmission can reach, up to 1 km in some instances. Other forms of waste heat recovery which have not been quantified include industrial process heat, commercial refrigeration, and heat pumps.

The above information is presented graphically on Figure 11.

Note that the various methods of saving energy would not always be used in combination nor would the percentage savings be additive.

RCMP COMMUNITY WORKSHEETS

TABLE A 1 - Page 1 o

NAME OF COMMUNITY	POPULATION	ANNUAL		HOUSEHOLD INFORMATION					DEGREE DAYS	TRANSPORT ENERGY (GJ*10)	RESIDENTIAL ENERGY (GJ*10)	COMMERC ENERG (GJ*10)
		COST	ELECT GJ*10	NUMBER HOMES	% WELL INSUL	ENERGY COST	ELECT. KWH	% WOOD HEATED				
MASSET	3175	N/A	20803	999	40	2600	11559	15	3791	N/A	26656	22481
BELLA COOLA	3047	N/A	12503	510	30	N/A	10638	60	3870	N/A	16084	9831
SANDSPIT	3000	N/A	19568	800	40	2640	11715	25	3670	N/A	21756	17440
CASSIAR	1850	N/A	35695	375	10	2800	9000	0	7600	14628	13825	190218
STEWART	1456	N/A	14549	430	25	2100	10958	30	4690	N/A	13418	15734
BELLA BELLA	1414	N/A	8428	271	25	1500	11706	70	3630	N/A	8318	8432
HOLBERG IND	650	N/A	6204	116	N/A	N/A	N/A	0	3400	448	1184	7701
LARQUETI ISLAND	587	N/A	0	125	50	N/A	0	99	3000	N/A	1381	337
MOSS	548	N/A	6832	146	N/A	N/A	8000	0	3500	N/A	2898	12235
HOLBERG	476	N/A	4134	125	60	1800	6000	8	3400	3377	1907	8440
ATLIN	475	N/A	2668	300	60	900	5872	80	6730	N/A	9925	6484
DOME CREEK / CRESCENT SPUR	475	N/A	0	172	70	4000	0	70	5400	N/A	2685	948
KITKATLA	463	N/A	1349	95	30	1536	8000	15	4000	N/A	2576	1202
DEASE LAKE	450	N/A	3162	135	70	700	8460	40	7025	N/A	4267	8569
ANAHIM LAKE	372	N/A	2549	70	N/A	N/A	5843	85	6290	N/A	2745	4815
TELEGRAPH CREEK	350	N/A	1054	38	95	900	7276	98	5810	N/A	1816	1996
KLEMTU	314	N/A	2089	57	N/A	240	14000	50	3700	N/A	1822	2079
KYUQUOT	300	N/A	0	70	N/A	N/A	0	N/A	3300	N/A	1013	215
FIELD	270	N/A	1735	111	30	1650	7000	50	5130	N/A	3390	2819
VERNON	251	N/A	2847	74	N/A	N/A	7000	0	3500	N/A	1516	5414
BAMFIELD	250	N/A	3616	119	70	N/A	9226	4	3280	N/A	2336	4862
ISKUT/EDDONTENAJON	250	N/A	1092	80	5	400	4236	100	6900	N/A	2904	6972
SEYMOUR ARM	217	N/A	0	150	N/A	N/A	0	90	4200	N/A	3042	616
HARTLEY BAY	214	N/A	1423	72	30	1200	8000	40	4000	N/A	1952	1886
TAKLA	208	N/A	0	50	N/A	1	0	100	5400	103	1265	2750
MAHATTA RIVER	195	N/A	1805	83	N/A	1300	5000	4	3800	276	835	4607
SEWELL INLET	187	N/A	2090	40	50	N/A	7000	8	3800	3545	756	4508
NEMAIAH VALLEY INDIAN BAND	175	N/A	0	33	N/A	1	0	100	6000	N/A	825	205
FORT BARINE IR #6	170	N/A	0	34	10	1	0	95	6100	N/A	1083	215
BIG BAR/DESMOND CREEK AREA	150	N/A	337	35	N/A	N/A	0	80	4700	N/A	640	501
KINGCOME INLET	147	N/A	563	24	10	950	7000	90	3500	265	613	899
FORT WARE	145	N/A	0	29	5	1	0	98	6800	N/A	1075	207
ERICKSON GOLD MINE VILLAGE	130	N/A	9633	20	100	N/A	10000	0	7600	709	627	31974
TIDE LAKE	125	N/A	0	N/A	N/A	N/A	N/A	N/A	4700	N/A	N/A	N/A
LOWER POST	123	N/A	0	40	N/A	N/A	N/A	N/A	7627	N/A	1481	529
MANNING PROVINCIAL PARK	121	N/A	2847	63	10	N/A	8500	0	4000	346	1900	5275
NAZKO INDIAN BAND	113	N/A	0	40	N/A	1	0	100	4800	N/A	887	192
JUSKATLA	100	N/A	1821	32	100	N/A	7500	10	3850	9422	556	3816
PORTAGE (NANCUT)	95	N/A	0	18	20	1	0	98	6100	19	712	114
HESQUIAHT	90	N/A	328	24	N/A	N/A	4500	100	3300	N/A	468	621
NITINAHT	81	N/A	323	22	1	1	4000	100	3200	N/A	469	711
TOAD RIVER AREA	80	N/A	0	20	N/A	N/A	0	80	6800	N/A	737	178
SCOTTY GOLD	80	N/A	0	N/A	N/A	N/A	N/A	N/A	4700	N/A	N/A	N/A
PROPHET RIVER	78	N/A	140	13	60	N/A	4000	92	6800	N/A	511	513
GERMANSEN LANDING	77	N/A	0	N/A	N/A	N/A	N/A	N/A	6460	N/A	N/A	N/A
PENNY	74	N/A	0	N/A	N/A	N/A	N/A	N/A	5500	N/A	N/A	N/A
MOSES INLET	70	N/A	0	N/A	N/A	N/A	N/A	N/A	3700	N/A	N/A	N/A
GILFORD ISLAND	67	N/A	64	13	50	1200	4000	75	3500	N/A	231	22
STAVE LAKE	55	N/A	246	12	0	N/A	8000	0	3200	N/A	177	288
LONGWORTH	50	N/A	0	N/A	N/A	N/A	N/A	N/A	5500	N/A	N/A	N/A
TROUT LAKE	50	N/A	0	35	50	N/A	0	90	4100	N/A	492	139
EASTGATE	50	N/A	292	85	95	N/A	1600	50	4000	N/A	1087	1136
NARROWS INLET LOGGING DIV.	47	N/A	369	10	N/A	N/A	8000	0	3200	468	205	999
PITT LAKE	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
MACHMELL	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
ACTEON SOUND	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
TIMFOR	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
WAKEMAN SOUND	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
KNIGHT INLET	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
TOM BROWN LAKE	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
PHILLIPS ARM	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
QUATAM RIVER	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
SECHELL CREEK	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
PORT DOUGLAS (HARRISON)	45	N/A	369	10	N/A	N/A	8000	0	3500	468	221	1042
HOOYA BAY (NOOTKA)	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
BARCLAY DIV.(KILDONAN)	45	N/A	369	10	N/A	N/A	8000	0	3400	468	215	1041
QWIKENO	45	N/A	275	12	N/A	1200	7000	50	3700	N/A	293	479
BOULDER BAY	45	N/A	364	12	0	N/A	0	100	3300	N/A	210	423
SCOTT COVE	45	N/A	1419	8	N/A	N/A	8000	0	3400	N/A	179	2928
SEYMOUR INLET	45	N/A	1419	8	N/A	N/A	8000	0	3400	N/A	179	2928
CLFAGH CREEK	45	N/A	1419	8	N/A	N/A	8000	0	3400	N/A	179	2928
KINGCOME INLET (WHONNOCK)	45	N/A	1419	8	N/A	N/A	8000	0	3500	N/A	184	2986
DRURY INLET	45	N/A	1419	8	N/A	N/A	8000	0	3400	N/A	179	2928

TABLE A 1 - Page 1 of 2

		DEGREE DAYS	TRANSPORT ENERGY (E.J810)	RESIDENTIAL ENERGY (E.J810)	COMMERCIAL ENERGY (E.J810)	ANNUAL EXISTING ENERGY (E.J810)							ANNUAL POTENTIAL ENERGY FROM (IN GIGA JOULES X 10)						
T.	% WOOD HEATER					OIL	PROP.	WOOD	HYDRO	WIND	SOLAR	OTHERS	INSUL.	WOOD	HYDRO	WIND	MANAG.	SOLAR	WASTE HEAT
	15	3791	N/A	26656	22481	46223	812	3726	0	0	0	0	1231	13816	13160	3880	4913	539	8321
	60	3870	N/A	16084	9831	15634	0	5299	5423	0	0	0	738	3533	73903	0	2591	275	2831
	25	3670	N/A	21756	17440	36232	0	2846	0	0	0	0	834	8538	4949	3149	3919	432	7827
	0	7600	14628	13825	190218	133881	0	0	0	0	0	70163	555	10028	6636	0	20404	202	22278
	30	4690	N/A	13418	15734	26462	1008	2017	0	0	0	0	443	4708	61867	0	2915	232	5819
	70	3630	N/A	8318	8432	13582	0	3167	0	0	0	0	394	1357	0	1079	1675	146	3371
	0	3400	448	1164	7791	8735	0	0	0	0	0	0	0	1184	0	0	888	62	2481
	99	3000	N/A	1381	337	99	0	1619	0	0	0	0	75	13	0	0	171	67	0
	0	3500	N/A	2898	12235	10963	4068	0	0	0	0	0	89	1585	23509	0	1513	78	2732
	8	3400	3377	1907	8440	10262	10	85	0	0	0	0	34	978	0	0	1034	67	1653
	80	6730	N/A	9925	6484	8747	0	8502	0	0	0	0	264	1680	5736	0	1640	162	1047
	70	5400	N/A	2685	948	1035	450	1879	0	0	0	0	54	805	8436	0	363	92	0
	15	4000	N/A	2576	1202	3521	0	258	0	0	0	0	152	1463	0	384	377	51	539
	40	7025	N/A	4267	8569	10149	864	1276	0	0	0	0	77	1915	0	0	1283	72	1264
	85	9290	N/A	2945	4815	5866	105	1788	0	0	0	0	0	315	0	0	776	37	1019
	98	5810	N/A	1816	1996	1789	236	1763	0	0	0	0	3	26	5736	0	381	31	421
	50	3700	N/A	1822	2079	1467	0	462	1972	0	0	0	77	462	3374	0	390	30	46
	N/A	3300	N/A	1013	213	213	0	0	0	0	0	N/A	0	N/A	3374	157	122	37	0
	50	5130	N/A	3390	2819	2526	2424	1258	0	0	0	0	224	1258	2339	0	620	59	702
	0	3500	N/A	1516	5414	5938	991	0	0	0	0	0	63	933	23959	0	693	39	1138
	4	3280	N/A	2336	4862	7266	22	45	0	0	0	N/A	48	1097	0	303	719	64	1446
	100	6900	N/A	2904	6972	6005	0	2642	0	0	0	0	240	0	0	0	987	43	436
	90	4200	N/A	3042	616	307	273	2984	0	0	0	0	249	304	6524	0	365	81	0
	40	4000	N/A	1952	1886	3578	0	521	0	0	0	0	115	782	0	0	383	38	569
	100	5400	103	1265	275	122	0	1388	0	0	0	0	114	0	0	0	154	27	0
	4	3600	276	835	4607	5420	0	21	0	0	0	0	25	515	0	0	544	28	730
	8	3800	3545	756	4508	5230	0	35	0	0	0	0	21	406	1349	0	526	21	836
	100	6000	N/A	825	205	136	0	893	0	0	0	0	17	0	1124	0	103	17	0
	95	6100	N/A	1083	215	244	21	1032	0	0	0	0	115	54	0	0	129	18	0
	80	4700	N/A	640	501	119	150	533	337	0	0	0	22	128	337	0	114	18	0
	90	3500	265	613	899	533	43	382	562	0	0	0	39	42	562	0	151	12	1
	98	6800	N/A	1075	207	97	0	1185	0	0	0	0	117	21	0	0	128	15	0
	0	7600	709	627	31974	24677	402	0	0	0	0	7522	0	402	0	0	3260	10	3853
	N/A	4700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	1124	0	0	0	0
	N/A	7627	N/A	1481	329	325	0	0	0	0	0	N/A	0	N/A	0	0	186	21	0
	0	4000	546	1900	5275	4470	2600	0	0	0	0	0	130	1298	6299	0	717	34	1138
	100	4800	N/A	867	192	128	0	951	0	0	0	0	74	0	0	0	107	21	0
	10	3850	9422	556	3816	4258	86	28	0	0	0	0	0	258	13160	0	437	17	728
	98	6100	19	712	114	128	0	697	0	0	0	0	79	14	0	0	82	9	0
	100	3300	N/A	468	621	604	0	347	0	0	0	0	27	0	641	56	108	12	131
	100	3200	N/A	469	711	728	81	370	0	0	0	0	33	0	1237	0	118	11	129
	80	6800	N/A	737	178	266	59	590	0	0	0	0	45	147	0	0	91	13	0
	N/A	4700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	6186	0	0	0	0
	92	6800	N/A	511	513	428	180	417	0	0	0	0	31	36	0	0	102	7	56
	N/A	6460	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	0	0	0	0	0
	N/A	5500	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	83	0	0	0	0
	N/A	3700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	629	0	0	0	0
	75	3500	N/A	231	22	123	0	130	0	0	0	0	11	43	0	0	25	7	25
	0	3200	N/A	177	288	430	34	0	0	0	0	N/A	0	69	10846	0	46	6	98
	N/A	5500	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	59	0	0	0	0
	90	4100	N/A	492	139	69	119	443	0	0	0	0	23	49	23172	0	63	18	0
	50	4000	N/A	1087	1136	807	916	500	0	0	0	0	8	467	6299	0	222	45	116
	0	3200	468	205	999	1089	115	0	0	0	0	N/A	0	115	1124	0	120	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3600	468	226	1082	1172	136	0	0	0	0	N/A	0	136	1124	0	130	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	5624	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3500	468	221	1062	1152	131	0	0	0	0	N/A	0	131	562	0	128	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	0	3400	468	215	1041	1131	125	0	0	0	0	N/A	0	125	1124	0	125	5	227
	50	3700	N/A	293	499	693	0	99	0	0	0	0	16	99	0	0	79	6	118
	100	3300	N/A	210	623	623	0	210	0	0	0	N/A	19	0	404	0	83	6	145
	0	3400	N/A	179	2928	3089	0	0	0	0	0	0	3	107	1124	0	310	4	547
	0	3400	N/A	179	2928	3089	0	0	0	0	0	0	3	107	1124	0	310	4	547
	0	3400	N/A	179	2928	3089	0	0	0	0	0	0	3	107	1124	0	310	4	547
	0	3500	N/A	184	2986	3151	0	0	0	0	0	0	3	112	1124	0	317	4	547
	0	3400	N/A	179	2928	3089	0	0	0	0	0	0	3	107	1124	0	310	4	547

ACRP COMMUNITY WORKSHEETS

TABLE A 1 -

NAME OF COMMUNITY	POPULATION	ANNUAL		HOUSEHOLD INFORMATION					DEGREE DAYS	TRANSPORT ENERGY (E.010)	RE
		COST	ELECT G.W210	NUMBER HOMES	% WELL INSUL	ENERGY COST	ELECT. KWH	% WOOD HEATED			
GRIFFINDOG CAMP	44	N/A	409	10	0	N/A	8000	0	3200	N/A	
KITLINELLA BAY	41	N/A	482	15	0	N/A	8000	0	3800	1439	
MUKHATLAHT	40	N/A	26	7	N/A		1	4000	100	3300	N/A
NITINAQUEET	40	N/A	0	N/A	N/A	N/A	N/A	N/A	3700	N/A	
SHOTBOLT	40	N/A	0	N/A	N/A	N/A	N/A	N/A	3700	N/A	
TATLA LAKE	37	N/A	1134	20	N/A	N/A	3515	90	5980	N/A	
SHEEMAHANT	32	N/A	390	3	0	N/A	8000	0	3800	1536	
SIMOOM SOUND	32	N/A	0	N/A	N/A	N/A	N/A	N/A	3400	N/A	
SAVARY ISLAND	31	N/A	0	N/A	N/A	N/A	N/A	N/A	3400	N/A	
QUATSINO MINE CAMP	30	N/A	6240	22	N/A	N/A	8000	N/A	6800	382	
WESTERN MINES (MYRA FALLS)	30	N/A	31235	3	N/A	N/A	8000	0	3400	N/A	
HORNET	30	N/A	0	N/A	N/A	N/A	N/A	N/A	3700	N/A	
CHRISTIAN VALLEY	26	N/A	0	16	30	N/A	0	69	3900	627	
BARR CREEK	25	N/A	0	N/A	N/A	N/A	N/A	0	3500	N/A	
EARLS CREEK	25	N/A	0	N/A	N/A	N/A	N/A	N/A	3400	N/A	
MOWAB CAMP	19	N/A	456	3	90	N/A	8000	0	3200	2823	
KEZTADIN LAKE - HIGHWAYS	17	N/A	819	17	N/A	N/A	7000	0	4800	N/A	
BOB QUINN LAKE	17	N/A	690	10	N/A	N/A	8000	0	6400	N/A	
GOOD HOPE LAKE - HIGHWAYS	12	N/A	807	11	N/A	N/A	10000	0	6800	N/A	

TABLE A 1 - Page 2 of 2

ORMATION		DEGREE DAYS	TRANSPORT ENERGY (G.J*10)	RESIDENTIAL ENERGY (G.J*10)	COMMERCIAL ENERGY (G.J*10)	ANNUAL EXISTING ENERGY (G.J*10)							ANNUAL POTENTIAL ENERGY FROM (IN GIGA JOULES * 10)					
ELECT. KWH	% WOOD HEATED					OIL	PROP.	WOOD	HYDRO	WIND	SOLAR	OTHERS	INSUL.	WOOD	HYDRO	WIND	MANAG.	SOLAR	WASTE HEAT
8000	0	3200	N/A	205	665	639	46	0	0	0	0	0	0	115	1124	0	87	5	163
8000	0	3800	1439	333	814	1075	0	0	73	0	0	0	0	198	1124	0	114	8	163
4000	100	3300	N/A	124	10	31	0	103	0	0	0	0	8	0	359	0	13	3	10
N/A	N/A	3700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	359	0	0	0	0
N/A	N/A	3700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	359	0	0	0	0
3515	90	3980	N/A	965	1504	1929	28	512	0	0	0	0	0	56	573	0	246	10	453
8000	0	3800	1536	273	809	1083	0	0	0	0	0	0	4	228	101	0	108	2	156
N/A	N/A	3400	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	0	0	0	0	0
N/A	N/A	3400	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	278	0	0	0	0
8000	N/A	6800	382	535	22058	20120	0	0	0	0	0	0	0	N/A	33	0	2259	11	2496
8000	0	3400	N/A	47	32222	13441	78	0	18685	0	0	0	0	47	13459	0	3226	1	5027
N/A	N/A	3700	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	168	0	0	0	0
0	69	3700	627	257	60	140	0	177	0	0	0	N/A	13	79	29	0	31	8	0
N/A	0	3500	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	224	0	0	0	0
N/A	N/A	3400	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	N/A	N/A	N/A	224	0	0	0	0
8000	0	3200	2823	83	895	978	0	0	0	0	0	0	0	56	562	0	97	1	182
7000	0	4800	N/A	304	2080	2248	136	0	0	0	0	0	0	170	0	0	238	9	327
8000	0	6400	N/A	261	2086	2176	0	0	0	0	0	N/A	0	171	19	0	234	5	276
10000	0	6800	N/A	309	2132	1810	631	0	0	0	0	0	3	185	13	0	244	5	322

APPENDIX 2

Questionnaire

Tabulated Questionnaire Results

CONTENTS

1. QUESTIONNAIRE

2. TABULATED QUESTIONNAIRE RESULTS

1. QUESTIONNAIRE

REMOTE COMMUNITIES DEMONTRATION PROGRAM
BRITISH COLUMBIA OVERVIEW STUDY

QUESTIONNAIRE

1. **Name of Community:**

   Regional District:

2. **Populations:** Total Permanent Residents:

   Seasonal Variation:

   Reason for variation, e g: school holidays, tourism, fishing season, forestry. (Please explain)

3. a) **What are the predominant economic activities:**

   Please rank in order of importance (1,2,3...). Place N/A beside those which are not important

   - Forestry -
   - Mining -
   - Tourism/Recreation -
   - Agriculture/Ranching -
   - Fishing -
   - Transportation -
   - Services -
   - Manufacturing -
   - Other (incl Adminstration) -

   b) **What occupations do most people work in:**

   Please place the total number of persons in each branch. Place N/A beside those which are not important

   - Forestry -
   - Mining -
   - Tourism/Recreation -
   - Agriculture/Ranching -
   - Fishing -
   - Transportation -
   - Services -
   - Manufacturing -
   - Unemployed -
   - Retired -
   - Other (incl Administration) -

   c) **Please describe the current economic circumstances of the area:**

   eg:
   - High level of steady employment _____
   - Seasonal employment _____
   - Consistent low level of employment _____
   - Unemployment is a result of widespread economic conditions _____
   - Other (please explain) _____

   d) **What are the prospects for long term population in the community?**

   - Steady or slowly growing population _____
   - Declining population _____
   - Economic or physical reasons which will limit the size or lifespan of the community _____

4. a) **How many buildings are there?**

Residential		_____
Commercial (Stores, Restaurants, Hotels)		_____
Community (School, Church, Hall)		_____
Industrial:	Saw Mill	_____
	Mine Facilities	_____
	Fish Packing	_____
	Other (_____)	_____

b) **How are the buildings heated?**
Please give the approximate share (as a percentage) of each heating method.

	Wood	Oil	Electrical	Propane	Coal	Other (_____)
Residential						
Commercial						
Community						
Industrial						

c) **Is any fuel used to generate electricity?**
If there are any substantial commercial/industrial users of energy, please specify the amount of fuel and the production rate of the facility, if applicable.

_____
_____
_____
_____

d) **Approximately how many of each type of dwelling are in the community?**

Wood Frame	_____	Avg Number of Rooms	_____
Log	_____	"	_____
Masonry	_____	"	_____
Trailer or Mobile	_____	"	_____
Other ( )	_____	"	_____

e) **How does the pattern of electricity use compare with an average community?**
(Please see attached examples)

_____
_____
_____
_____

f) **Other comments on the community's energy use**

_____
_____
_____
_____

g) **What use of energy is there for transportation?**
(List local users only, not transient)

Number of Vehicles _____

Where is fuel distributed, ie (by service station or travel _____ miles to adjacent distributor) _____

Vehicle fuel consumed per year _____

Number of Boats _____

Where is fuel distributed, ie (by marine service or travel _____ miles to adjacent distributor) _____

Fuel distributed per year _____

h) **What is the maintenance frequency of the fuel using devices in the community (engines, generators or furnaces/heaters). Are there any significant costs involved?**

_____

_____

_____

_____

i) **Please sketch a map of the community or enclose a printed map if available**

5. a) **Is the community served by a central diesel - electric generator?** _____

If so, how many kilowatts can it produce? _____

When was it installed _____

Who owns and maintains it? _____

What proportion of the community's total electricity needs are met by it? _____

If the generator is **NOT** operated by B C Hydro, please include the following information:

Hours of operation per day _____

Average energy produced (kilowatts) _____

Fuel used per year _____

Cost of fuel _____

Cost and frequency of Maintenance _____

_____

b) **If electricity is not supplied from a central source, by what means, if any, is electricity supplied to the community and its residents?**

_____

_____

_____

_____

c) **Is waste heat from electrical generation or other sources currently being used for space heating or other purposes?**
(If yes, please explain)

_____

_____

_____

_____

d) **Do you know of any plans in progress to change the community's energy supply situation in any way?**

_____

_____

_____

_____

e) **Other comments on the community's energy supply**

_____

_____

_____

_____

6. **What is the price currently being paid by consumers in the community for:**
(Indicate N/A where a fuel is not used)

Indicate delivery costs where not included in fuel price.

a) heating oil per litre or gallon _____

b) electricity per kilowatt hour _____

c) propane per 100 lbs _____

d) Diesel fuel per litre or gallon _____

e) Regular gasoline per litre or gallon _____

f) Firewood per cord _____

g) Coal per kilogram or pound _____

h) Other (please specify) _____ _____

i) What does the average household spend per year for energy used in heating, hot water, cooking and electricity. _____

If one source of energy is used for several applications, please indicate

_____

_____

_____

_____

_____

_____

7. a) **To your knowledge, has any consideration been given to utilizing small hydro, wind, wood-waste, tidal or any other non-oil utilizing options for supplying the heating and electricity needs of the community on an individual or community basis?**
(Please explain)

_____

_____

_____

_____

_____

_____

b) **Are there any of the above energy alternatives which have not been studied, but which may show potential?**
(Please indicate which)

_____

_____

_____

_____

_____

_____

c) **Has anyone built a low energy house, solar greenhouse or other renewable energy or energy conserving system?**
(Please indicate which)

_____

_____

d) **Has any use been made of CHIP grants (insulation), COSP grants (furnace conversions), low interest loads or other energy saving programs**
(Please indicate number of applications)

_____

_____

e) **What percentage of the homes are well insulated?**

_____

_____

8. a) **Whom might we contact to gain further information about this community?**
(Please specify capacities or titles as appropriate, telephone numbers and addresses if possible)

_____

_____

_____

_____

_____

_____

b) **Could we establish the name(s) of person(s) who would be interested in implementing an alternative energy or energy conserving scheme in the community?**

_____

_____

_____

_____

_____

_____

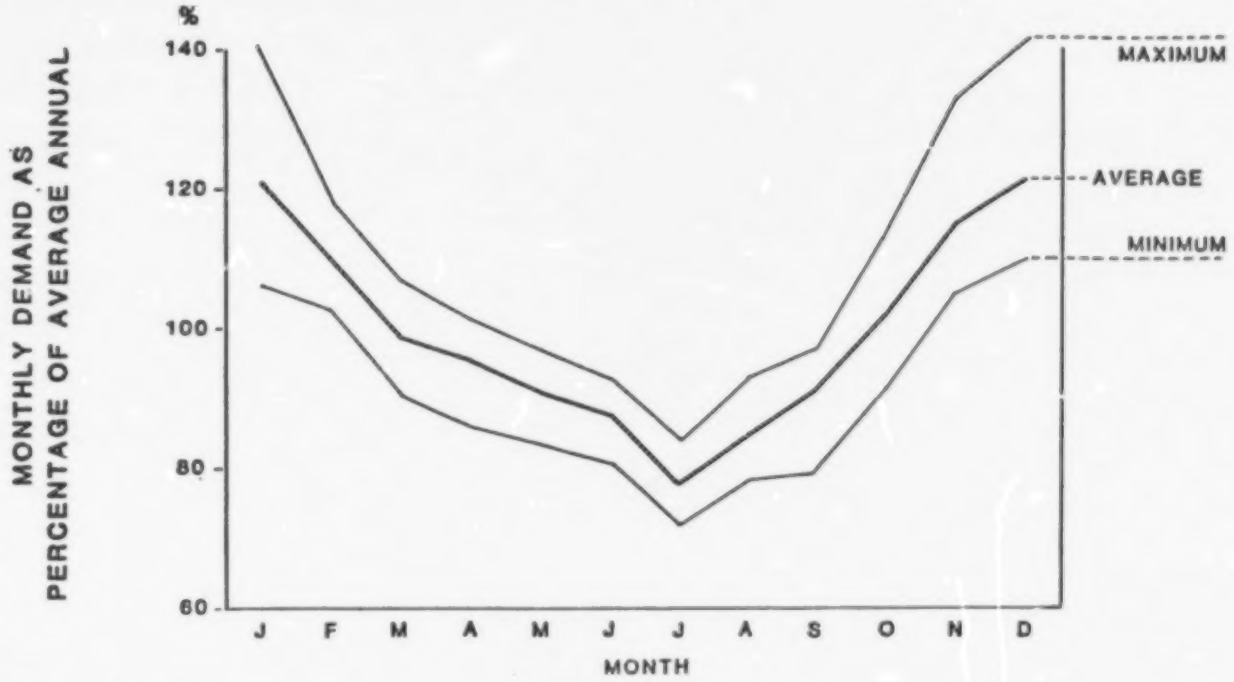
9. **Please return the questionnaire to:**

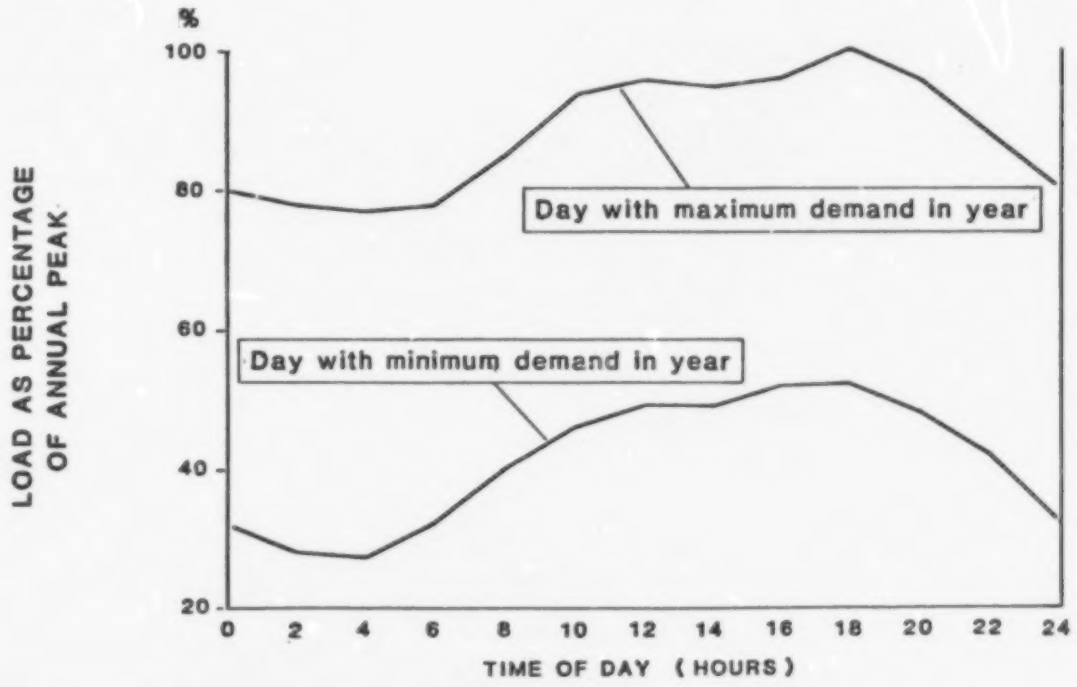
SIGMA Engineering Ltd
801 - 1155 West Georgia Street
VANCOUVER, B C
V6E 3H4

Attention: Mr G S McDonnell

Thank you.

VARIATION IN MONTHLY LOAD DEMAND





VARIATION IN DEMAND DURING ONE DAY

TYPICAL LOAD PATTERNS FOR SMALL COMMUNITY

REMOTE COMMUNITY DEMONSTRATION PROGRAM

2. TABULATED QUESTIONNAIRE RESULTS

COMMUNITY NAME : ACTEON SOUND
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : ANAHIM LAKE
REGIONAL DISTRICT : CARIBOO

POPULATION : 372
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - TOURISM/RECREATION
2 - AGRICULTURE/RANCHING
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 70
COMMERCIAL - 8
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	85	10	0	5	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1700 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 290 KW
CUBIC METERS OF FUEL USED PER YEAR - 618
COST OF FUEL/LT - $ 0.321
COST AND FREQUENCY OF MAINTENANCE - $ 35528 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.330
ELECTRICITY-CENTS/KWH - 4.5
PROPANE PER 100 lbs - $ 31.00
DIESEL FUEL PER LITRE - $ 0.506
REGULAR GAS PER LITRE - $ 0.550
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : BC HYDRO HAS BEEN DOING SOME STUDIES INCLUDING A POSSIBLE HYDRO PROJECT ON THE HOMATHKO RIVER

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : NEITHER REGIONAL DISTRICT NOR BC HYDRO (LOCAL) WOULD COMPLETE REVISED QUESTIONNAIRE

COMMUNITY NAME : ATLIN
REGIONAL DISTRICT : STIKINE

POPULATION : 475
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - TOURISM/RECREATION
3 - FORESTRY
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - 150
2 - TOURISM/RECREATION - 40
3 - FORESTRY - 2
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 300
COMMERCIAL - 6
COMMUNITY - 3
INDUSTRIAL - 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	80	10	10	0	0	0
COMMERCIAL	50	50	0	0	0	0
COMMUNITY	50	50	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 135 # ROOMS - N/A
LOG - 150 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 15 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1750 KW
YEAR INSTALLED - 79
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 310 KW
CUBIC METERS OF FUEL USED PER YEAR - 750
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 126300 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.466
ELECTRICITY-CENTS/KWH - 4.5
PROPANE PER 100 lbs - $ 40.00
DIESEL FUEL PER LITRE - $ 0.520
REGULAR GAS PER LITRE - $ 0.599
FIREWOOD PER CORD - $ 60
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 900

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : SPECIAL GRANTS ARE AVAILABLE FOR INDIVIDUALS

% HOMES WELL INSULATED : ABOUT 60% OF THE HOMES

COMMUNITY NAME : BAKER MINE CAMP
REGIONAL DISTRICT : STIKINE

POPULATION : 30
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - 30
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 22
COMMERCIAL - 5
COMMUNITY - N/A
INDUSTRIAL - 8

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	60	40	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 22 # ROOMS - 4
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 98

MAINTENANCE COST OF FUEL USING DEVICES : 40800

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1500 KW
YEAR INSTALLED - 81
OWNER - DUPONT OF CANADA
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 800 KW
CUBIC METERS OF FUEL USED PER YEAR - 1600
COST OF FUEL/LT - $ 0.610
COST AND FREQUENCY OF MAINTENANCE - $ 40800 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.610
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.610
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO WAS STUDIED BUT APPEARED TO BE TOO COSTLY

ANY ENERGY CONSERVING SYSTEMS : WASTE HEAT RECOVERY IS USED

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : ISOLATED MINING CAMP WHERE THE ONLY ACCESS IS BY AIR

COMMUNITY NAME : BAMFIELD
REGIONAL DISTRICT : ALBERNI - CLAYOQUOT

POPULATION : 250
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - FISHING
3 - OTHER
4 - TOURISM/RECREATION
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 119
COMMERCIAL - 17
COMMUNITY - 3
INDUSTRIAL - 9

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	4	82	12	2	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 100 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 19 # ROOMS - 5
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 2200 KW
YEAR INSTALLED - 72
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.340
ELECTRICITY-CENTS/KWH - 4.5
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - $ 0.500
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : BC HYDRO IS MEASURING WIND POWER TO ASCERTAIN FEASIBILITY .

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : ABOUT 70% OF THE HOMES

REMARKS : SUMMER LOADS ARE ABOVE AVERAGE DUE TO MARINE STATION AND FISHING

COMMUNITY NAME : BARCLAY DIV.(KILDONAN)
REGIONAL DISTRICT : ALBERNI-CLAYOQUOT

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : BARR CREEK
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 25
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 25
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : THIS LOGGING CAMP OPERATED BY PACIFIC FOREST PRODUCTS DID NOT HAVE A COMPLETED QUESTIONNAIRE

COMMUNITY NAME : BELLA BELLA
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 1414
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - SERVICES
3 - TRANSPORTATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - FISHING		- N/A
2 - SERVICES		- N/A
3 - TRANSPORTATION		- N/A
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 271
COMMERCIAL	- 7
COMMUNITY	- 12
INDUSTRIAL	- 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	70	30	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :

# WOOD FRAME	- 270	# ROOMS - 5
# LOG	- 0	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 0	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 3000 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 860 KW
CUBIC METERS OF FUEL USED PER YEAR - 2450
COST OF FUEL/LT - $ 0.300
COST AND FREQUENCY OF MAINTENANCE - $ 187000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.350
ELECTRICITY-CENTS/KWH	- 4.5
PROPANE PER 100 lbs	- $ 54.00
DIESEL FUEL PER LITRE	- N/A
REGULAR GAS PER LITRE	- $ 0.500
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1500

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : ABOUT 25% OF THE HOMES

REMARKS : PREDOMINANTLY NATIVE POPULATION. FEW MOTOR VEHICLES

COMMUNITY NAME : BELLA COOLA
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 3047
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - FISHING
3 - TOURISM/RECREATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - FORESTRY	- N/A
2 - FISHING	- N/A
3 - TOURISM/RECREATION	- N/A
4 - N/A	
5 - N/A	

NUMBER OF BUILDINGS :

RESIDENTIAL	- 510
COMMERCIAL	- 65
COMMUNITY	- N/A
INDUSTRIAL	- N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	60	35	5	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :

# WOOD FRAME	- 475	# ROOMS - 6
# LOG	- 20	# ROOMS - N/A
# MASONRY	- 10	# ROOMS - N/A
# TRAILER	- 5	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 3600 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 84 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 1400 KW
CUBIC METERS OF FUEL USED PER YEAR - 2000
COST OF FUEL/LT - $ 0.284
COST AND FREQUENCY OF MAINTENANCE - $ 418467 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : ANOTHER SMALL HYDRO SITE MAY BE BUILT

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.345
ELECTRICITY-CENTS/KWH	- 4.5
PROPANE PER 100 lbs	- $ 29.50
DIESEL FUEL PER LITRE	- $ 0.443
REGULAR GAS PER LITRE	- $ 0.509
FIREWOOD PER CORD	- $ 80
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : ABOUT 30% OF THE HOMES

REMARKS : 700 KW OF ELECTRICAL CAPACITY FROM EXISTING SMALL HYDRO PLANT. AREA SERVED INCLUDES HAGENSBORG.

COMMUNITY NAME : BIG BAR/JESMOND CREEK AREA
REGIONAL DISTRICT : THOMPSON - NICOLA

POPULATION : 100
SEASONAL VARIATION : 100

PREDOMINANT ECONOMIC ACTIVITIES :
1 - AGRICULTURE/RANCHING
2 - TOURISM/RECREATION
3 - FORESTRY
4 - MINING
5 - TRANSPORTATION

PREDOMINANT OCCUPATIONS :
1 - AGRICULTURE/RANCHING - N/A
2 - TOURISM/RECREATION - N/A
3 - FORESTRY - N/A
4 - MINING - N/A
5 - TRANSPORTATION - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 35
COMMERCIAL - 2
COMMUNITY - 2
INDUSTRIAL - 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	80	5	0	15	0	0
COMMERCIAL	40	60	0	0	0	0
COMMUNITY	0	0	0	100	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 11 # ROOMS - 4
LOG - 15 # ROOMS - 7
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 9 # ROOMS - 4

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NEGOTIATIONS WITH BC HYDRO - NO SUCCESS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 23.00
DIESEL FUEL PER LITRE - $ 0.370
REGULAR GAS PER LITRE - $ 0.372
FIREWOOD PER CORD - $ 60
COAL PER KILOGRAM - N/A
OTHER : KEROSENE -

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : ONE 50 kW HYDRO UNIT HAS BEEN INSTALLED - FURTHER INVESTIGATIONS ARE PENDING

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NOT KNOWN BUT UNLIKELY

% HOMES WELL INSULATED : ABOUT 90%

REMARKS : NO CENTRAL GENERATING SYSTEMS. FAIRLY SPREAD OUT FARMS AND GUEST RANCHES.

COMMUNITY NAME : BOB QUINN LAKE
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 17
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - SERVICES
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - SERVICES - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	0	80	0	100
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 10 # ROOMS - N/A
OTHER - 1 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 250 KW
YEAR INSTALLED - N/A
OWNER - B.C.B.C.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 70 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : HIGHWAYS DEPARTMENT MAINTENANCE CAMP

COMMUNITY NAME : BOULDER BAY
REGIONAL DISTRICT : DEWDNEY ALOUETTE

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 12
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 12 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 75 KW
YEAR INSTALLED - N/A
OWNER - B.C.B.C.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 37 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : 0% ARE WELL INSULATED

REMARKS : CORRECTIONS BRANCH WORK CAMP POPULATION IS CONSTANT BUT THE RESIDENTS CHANGE

COMMUNITY NAME : CASSIAR
REGIONAL DISTRICT : STIKINE

POPULATION : 1800
SEASONAL VARIATION : 100

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - SERVICES
3 - TOURISM/RECREATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - 600
2 - SERVICES - 100
3 - TOURISM/RECREATION - 20
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 375
COMMERCIAL - 12
COMMUNITY - 15
INDUSTRIAL - 33

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	90	0	0	0	10
COMMERCIAL	0	70	0	0	0	30
COMMUNITY	0	50	0	0	0	50
INDUSTRIAL	0	30	0	0	0	70

DWELLING DESCRIPTION :
WOOD FRAME - 108 # ROOMS - N/A
LOG - 41 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 210 # ROOMS - 5
OTHER - 15 # ROOMS - 5

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 3791

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 2400 KW
YEAR INSTALLED - 79
OWNER - BRINCO MINING LTD
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 21
AVERAGE ENERGY PRODUCED - 2400 KW
CUBIC METERS OF FUEL USED PER YEAR - 11081
COST OF FUEL/LT - $ 0.300
COST AND FREQUENCY OF MAINTENANCE - $ 937383 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.408
ELECTRICITY-CENTS/KWH - 14.0
PROPANE PER 100 lbs - $ 30.00
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 2800

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : PRELIMINARY INVESTIGATIONS ON SMALL HYDRO POWER

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 10% ARE WELL INSULATED

REMARKS : ENERGY IS SUBSIDIZED TO MINE EMPLOYEES. STEAM HEAT IS THE OTHER TYPE OF ENERGY USED. MINE AND MILL ACCOUNT FOR 90% OF TOTAL ENERGY USE.

COMMUNITY NAME : CHRISTIAN VALLEY
REGIONAL DISTRICT : KOOTENAY - BOUNDARY

POPULATION : 19
SEASONAL VARIATION : 14

PREDOMINANT ECONOMIC ACTIVITIES :
1 - AGRICULTURE/RANCHING
2 - FORESTRY
3 - TOURISM/RECREATION
4 - MINING
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - AGRICULTURE/RANCHING - 13
2 - FORESTRY - 6
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 16
COMMERCIAL - 0
COMMUNITY - 0
INDUSTRIAL - 0

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	69	31	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 9 # ROOMS - 8
LOG - 5 # ROOMS - 7
MASONRY - 0 # ROOMS - N/A
TRAILER - 2 # ROOMS - 2
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 161

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : TRYING TO INSTALL A MICRO-HYDRO PROJECT

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.330
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 30.00
DIESEL FUEL PER LITRE - $ 0.368
REGULAR GAS PER LITRE - $ 0.368
FIREWOOD PER CORD - $ 55
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A SMALL HYDRO SITE SEEMS TO BE THE MOST PROMISING
- A STUDY HAS ALREADY BEEN DONE

ANY ENERGY CONSERVING SYSTEMS : A SOLAR HOME HAS BEEN BUILT - AS YET UNFINISHED

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 30% OF THE HOMES

REMARKS : SPREAD OUT RANCHING COMMUNITY WITH NO CENTRAL GENERATOR

COMMUNITY NAME : CLEAGH CREEK
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 45
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 8
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	80	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	80	20	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 3 # ROOMS - 2
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 5 # ROOMS - 3

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 60
OWNER - WHONNOCK
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 124 KW
CUBIC METERS OF FUEL USED PER YEAR - 364
COST OF FUEL/LT - $ 0.357
COST AND FREQUENCY OF MAINTENANCE - $ 3000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.308
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.355
REGULAR GAS PER LITRE - $ 0.390
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NONE

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : LOGGING CAMP

COMMUNITY NAME : DEASE LAKE
REGIONAL DISTRICT : STIKINE

POPULATION : 400
SEASONAL VARIATION : 100

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - MINING
3 - TOURISM/RECREATION
4 - SERVICES
5 - TRANSPORTATION

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - MINING - N/A
3 - TOURISM/RECREATION - N/A
4 - FISHING - 35
5 - UNEMPLOYED - 10

NUMBER OF BUILDINGS :
RESIDENTIAL - 135
COMMERCIAL - 6
COMMUNITY - 3
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	40	50	10	0	0	0
COMMERCIAL	0	20	40	40	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 50 # ROOMS - 7
LOG - 35 # ROOMS - 2
MASONRY - 0 # ROOMS - N/A
TRAILER - 50 # ROOMS - 5
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1650 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 400 KW
CUBIC METERS OF FUEL USED PER YEAR - 945
COST OF FUEL/LT - $ 0.320
COST AND FREQUENCY OF MAINTENANCE - $ 404898 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO PLANS FOR CHANGE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.302
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 38.00
DIESEL FUEL PER LITRE - $ 0.545
REGULAR GAS PER LITRE - $ 0.590
FIREWOOD PER CORD - $ 70
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 700

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 70% OF THE HOMES

REMARKS : ADMINISTRATIVE CENTER FOR NORTHWESTERN BC

COMMUNITY NAME : DOME CREEK / CRESCENT SPUR
REGIONAL DISTRICT : FRASER - FORT GEORGE

POPULATION : 475
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - AGRICULTURE/RANCHING
2 - FORESTRY
3 - MANUFACTURING
4 - MINING
5 - TOURISM/RECREATION

PREDOMINANT OCCUPATIONS :
1 - AGRICULTURE/RANCHING - 55
2 - FORESTRY - 50
3 - TRANSPORTATION - 25
4 - MANUFACTURING - 13
5 - MINING - 10

NUMBER OF BUILDINGS :
RESIDENTIAL - 172
COMMERCIAL - N/A
COMMUNITY - 5
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	70	15	0	15	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	0	0	15	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME - 150	# ROOMS - 6
# LOG - 10	# ROOMS - 6
# MASONRY - 0	# ROOMS - N/A
# TRAILER - 12	# ROOMS - N/A
# OTHER - 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : TRYING TO GET A BC HYDRO CONNECTION

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.440
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 30.00
DIESEL FUEL PER LITRE - $ 0.440
REGULAR GAS PER LITRE - $ 0.440
FIREWOOD PER CORD - $ 90
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 4000

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : WIND POWER HAS BEEN TRIED UNSUCCESSFULLY

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : ABOUT 90% ARE WELL INSULATED

REMARKS : A SPREAD OUT COMMUNITY WITH INDIVIDUAL GENERATORS

COMMUNITY NAME : DRURY INLET
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 45
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 8
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	80	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	80	20	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 3 # ROOMS - 2
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 5 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 60
OWNER - WHONNOCK
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 124 KW
CUBIC METERS OF FUEL USED PER YEAR - 364
COST OF FUEL/LT - $ 0.357
COST AND FREQUENCY OF MAINTENANCE - $ 3000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.308
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.355
REGULAR GAS PER LITRE - $ 0.390
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NONE

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : LOGGING CAMP

COMMUNITY NAME : EARLS CREEK
REGIONAL DISTRICT : SUNSHINE COAST

POPULATION : 25
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : THIS LOGGING CAMP OPERATED BY PACIFIC FOREST PRODUCTS DID NOT HAVE A COMPLETED QUESTIONNAIRE

COMMUNITY NAME : EASTGATE
REGIONAL DISTRICT : OKANAGAN-SIMILKAMEEN

POPULATION : 50
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - TOURISM/RECREATION
2 - SERVICES
3 - TRANSPORTATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 -	TOURISM/RECREATION	- 19
2 -	FORESTRY	- 7
3 -	SERVICES	- 6
4 -	TRANSPORTATION	- 2
5 -	FORESTRY	- 3

NUMBER OF BUILDINGS :

RESIDENTIAL	- 85
COMMERCIAL	- 4
COMMUNITY	- N/A
INDUSTRIAL	- 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	50	0	0	50	0	0
COMMERCIAL	0	40	0	60	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	10	15	0	75	0	0

DWELLING DESCRIPTION :

# WOOD FRAME -	70	# ROOMS - 5
# LOG -	12	# ROOMS - 5
# MASONRY -	0	# ROOMS - N/A
# TRAILER -	3	# ROOMS - 5
# OTHER -	0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 50 KW
YEAR INSTALLED - 75
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 30 KW
CUBIC METERS OF FUEL USED PER YEAR - 75
COST OF FUEL/LT - $ 0.356
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : HOPE TO TIE IN TO BC HYDRO LINES

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE -	$ 0.500
ELECTRICITY-CENTS/KWH -	N/A
PROPANE PER 100 lbs -	N/A
DIESEL FUEL PER LITRE -	$ 0.500
REGULAR GAS PER LITRE -	N/A
FIREWOOD PER CORD -	N/A
COAL PER KILOGRAM -	N/A
OTHER : -	N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A SMALL HYDRO SCHEME FOR SIMILKAMEEN FALLS WAS STUDIED - COULD NOT MEET DEMAND AND COST HIGH

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : APPROXIMATELY 95% OF THE HOMES

REMARKS : A NEW SUBDIVISION NEAR MANNING PARK. ONLY COMMERCIAL BUILDINGS SERVED BY GENERATOR

COMMUNITY NAME : ERICKSON GOLD MINE VILLAGE
REGIONAL DISTRICT : STIKINE

POPULATION : 120
SEASONAL VARIATION : 20

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 20
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	0	0	0	0	100

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 3 # ROOMS - 4
MASONRY - 0 # ROOMS - N/A
TRAILER - 17 # ROOMS - 4
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 182

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 2100 KW
YEAR INSTALLED - 79
OWNER - ERICKSON MINE
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 900 KW
CUBIC METERS OF FUEL USED PER YEAR - 2470
COST OF FUEL/LT - $ 0.330
COST AND FREQUENCY OF MAINTENANCE - $ 120000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.330
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 35.00
DIESEL FUEL PER LITRE - $ 0.440
REGULAR GAS PER LITRE - $ 0.440
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : 100% OF THE HOMES ARE WELL INSULATED

REMARKS : MINE ACTIVITIES USE A LARGE PROPORTION OF THE ENERGY

COMMUNITY NAME : FIELD
REGIONAL DISTRICT : COLUMBIA - SHUSWAP

POPULATION : 260
SEASONAL VARIATION : 20

PREDOMINANT ECONOMIC ACTIVITIES :
1 - TOURISM/RECREATION
2 - OTHER
3 - TRANSPORTATION
4 - SERVICES
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - FORESTRY		- N/A
2 - TRANSPORTATION		- N/A
3 - FORESTRY		- N/A
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 111
COMMERCIAL	- 3
COMMUNITY	- 4
INDUSTRIAL	- 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	50	5	0	45	0	0
COMMERCIAL	0	0	0	100	0	0
COMMUNITY	0	0	0	100	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME -	95	# ROOMS - 5
# LOG -	5	# ROOMS - 5
# MASONRY -	0	# ROOMS - N/A
# TRAILER -	11	# ROOMS - 6
# OTHER -	0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 600 KW
YEAR INSTALLED - 62
OWNER - NORTHERN C. P. C.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 215 KW
CUBIC METERS OF FUEL USED PER YEAR - 450
COST OF FUEL/LT - $ 0.335
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : HOPE TO DEVELOP HYDRO ELECTRICITY

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.336
ELECTRICITY-CENTS/KWH	- 22.5
PROPANE PER 100 lbs	- $ 18.80
DIESEL FUEL PER LITRE	- N/A
REGULAR GAS PER LITRE	- $ 0.459
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1650

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : TRANSMISSION FROM LAKE LOUISE, SMALL HYDRO, AND A NATURAL GAS PIPELINE ARE BEING STUDIED

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : ABOUT 18 HOMES HAVE USED THE CHIP PROGRAM

% HOMES WELL INSULATED : ABOUT 30% ARE WELL INSULATED

REMARKS : RESIDENTS PAY THE FULL COST OF DIESEL GENERATION. MOST ACTIVITIES RELATED TO YOHO NATIONAL PARK AND C.P.R.

COMMUNITY NAME : FORT BABINE IR #6
REGIONAL DISTRICT : BULKLEY-NECHAKO

POPULATION : 170
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - FORESTRY
3 - MINING
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED		- N/A
2 - FISHING		- 13
3 - FORESTRY		- 10
4 - FORESTRY		- 4
5 - MINING		- 1

NUMBER OF BUILDINGS :

RESIDENTIAL	- 34
COMMERCIAL	- 1
COMMUNITY	- 6
INDUSTRIAL	- N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	95	3	0	2	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	5	95	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME - 30	# ROOMS - 4
# LOG - 3	# ROOMS - 3
# MASONRY - 0	# ROOMS - N/A
# TRAILER - 1	# ROOMS - N/A
# OTHER - 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : TENTATIVE PLANS TO RUN BC HYDRO LINES IN

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.440
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - $ 0.990
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : POSSIBLY SMALL HYDRO

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 10% ARE WELL INSULATED

REMARKS : NATIVE COMMUNITY, ACCESS BY AIR AND WATER ONLY. GENERATOR FOR SCHOOL ONLY

COMMUNITY NAME : FORT WARE
REGIONAL DISTRICT : PEACE RIVER

POPULATION : 145
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - MINING
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED		- N/A
2 - FORESTRY		- N/A
3 - MINING		- N/A
4 - FORESTRY		- N/A
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 29
COMMERCIAL	- 1
COMMUNITY	- 6
INDUSTRIAL	- 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	98	2	0	0	0	0
COMMERCIAL	90	10	0	0	0	0
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 25	# ROOMS - N/A
# LOG	- 4	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 0	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- N/A
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- N/A
DIESEL FUEL PER LITRE	- N/A
REGULAR GAS PER LITRE	- $ 1.100
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 5% (NEW HOMES)

REMARKS : NATIVE COMMUNITY WITH NO CENTRAL GENERATION

COMMUNITY NAME : GERMANSEN LANDING
REGIONAL DISTRICT : N/A

POPULATION : 77
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - FORESTRY
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - MINING		- N/A
2 - FORESTRY		- N/A
3 - OTHER		- N/A
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 27
COMMERCIAL	- 3
COMMUNITY	- N/A
INDUSTRIAL	- N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME -	3	# ROOMS - N/A
# LOG -	24	# ROOMS - N/A
# MASONRY -	0	# ROOMS - N/A
# TRAILER -	0	# ROOMS - N/A
# OTHER -	0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.191
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- $ 34.00
DIESEL FUEL PER LITRE	- N/A
REGULAR GAS PER LITRE	- $ 0.593
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

COMMUNITY NAME : GILFORD ISLAND
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 67
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - OTHER
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED	- N/A	
2 - FISHING	- 3	
3 - FORESTRY	- 2	
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :
RESIDENTIAL - 13
COMMERCIAL - N/A
COMMUNITY - 2
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	75	25	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME -	13	# ROOMS - 5
# LOG -	0	# ROOMS - N/A
# MASONRY -	0	# ROOMS - N/A
# TRAILER -	0	# ROOMS - N/A
# OTHER -	0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 45 KW
YEAR INSTALLED - 79
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 60 %
HOURS OF OPERATION PER DAY - 12
AVERAGE ENERGY PRODUCED - 13 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - $ 0.460
COST AND FREQUENCY OF MAINTENANCE - $ 5000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.460
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 35.00
DIESEL FUEL PER LITRE - $ 0.460
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1200

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : CHIP GRANTS HAVE BEEN USED BY 100% OF COMMUNITY

% HOMES WELL INSULATED : ABOUT 50% OF THE HOMES

REMARKS : NATIVE COMMUNITY

COMMUNITY NAME : GOOD HOPE LAKE - HIGHWAYS
REGIONAL DISTRICT : STIKINE

POPULATION : 12
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - SERVICES
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - SERVICES - 12
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 11
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 5

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	0	80	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	0	0	100	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 1 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 10 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 165 KW
YEAR INSTALLED - 82
OWNER - B.C.B.C.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 70 KW
CUBIC METERS OF FUEL USED PER YEAR - 207
COST OF FUEL/LT - $ 0.372
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.372
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 26.80
DIESEL FUEL PER LITRE - $ 0.372
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : HIGHWAYS DEPARTMENT MAINTENANCE CAMP

COMMUNITY NAME : GREENWOOD CAMP
REGIONAL DISTRICT : COMOX-STRATHCONA

POPULATION : 4
SEASONAL VARIATION : 80

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 76
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - 1
INDUSTRIAL - 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	10	80	10	0	0
COMMERCIAL	0	10	80	10	0	0
COMMUNITY	0	10	80	10	0	0
INDUSTRIAL	0	10	80	10	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - 70
OWNER - PACIFIC FOREST PR
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - 105
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : 0% OF THE HOMES ARE WELL INSULATED

REMARKS : LOGGING CAMP OPERATED 9 MONTHS OF THE YEAR

COMMUNITY NAME : HARTLEY BAY
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 214
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - OTHER
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED		- N/A
2 - FISHING		- 22
3 - FORESTRY		- 10
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 72
COMMERCIAL	- 1
COMMUNITY	- 4
INDUSTRIAL	- 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	40	40	20	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 72	# ROOMS - 6
# LOG	- 0	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 0	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 300 KW
YEAR INSTALLED - 78
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 125 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 100 KW
CUBIC METERS OF FUEL USED PER YEAR - 365
COST OF FUEL/LT - $ 0.460
COST AND FREQUENCY OF MAINTENANCE - $ 15000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : 2 SMALL HYDRO STUDIES HAVE BEEN DONE

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.460
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- $ 35.00
DIESEL FUEL PER LITRE	- $ 0.460
REGULAR GAS PER LITRE	- N/A
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1200

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO AND WIND HAVE BEEN LOOKED AT , BUT NEITHER SEEMS FEASIBLE

ANY ENERGY CONSERVING SYSTEMS : YES - 2 NEW TEACHERAGES ARE BEING BUILT

ENERGY GRANTS OR PROGRAMS : CHIP GRANTS ARE BEING ARRANGED FOR THE VILLAGE

% HOMES WELL INSULATED : ABOUT 30% ARE WELL INSULATED

REMARKS : NATIVE COMMUNITY WHERE PER CAPITA USAGE IS RELATIVELY HIGH FOR A DIESEL SYSTEM.
ELECTRICITY CHARGE AT $20/MONTH

COMMUNITY NAME : HESQUIAHT
REGIONAL DISTRICT : ALBERNI-CLAYOQUOT

POPULATION : 90
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - FISHING - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 24
COMMERCIAL - N/A
COMMUNITY - 2
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	0	100	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 24 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 100 KW
YEAR INSTALLED - 82
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 50 %
HOURS OF OPERATION PER DAY - 16
AVERAGE ENERGY PRODUCED - 50 KW
CUBIC METERS OF FUEL USED PER YEAR - 60
COST OF FUEL/LT - $ 0.410
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO COULD BE A POSSIBILITY

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : NATIVE COMMUNITY USING GENERATOR PART TIME

COMMUNITY NAME : HOLBERG
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 452
SEASONAL VARIATION : 48

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - TOURISM/RECREATION
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 200
2 - TOURISM/RECREATION - N/A
3 - SERVICES - 12
4 - FORESTRY - 6
5 - FISHING - 2

NUMBER OF BUILDINGS :
RESIDENTIAL - 125
COMMERCIAL - 6
COMMUNITY - 4
INDUSTRIAL - 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	8	90	1	1	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 50 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 75 # ROOMS - 5
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 866

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1050 KW
YEAR INSTALLED - 65
OWNER - WESTERN P. P.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 600 KW
CUBIC METERS OF FUEL USED PER YEAR - 1060
COST OF FUEL/LT - $ 0.304
COST AND FREQUENCY OF MAINTENANCE - $ 150000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.304
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 26.10
DIESEL FUEL PER LITRE - $ 0.459
REGULAR GAS PER LITRE - $ 0.468
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1800

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO AND WOOD WASTE HAVE BEEN CONSIDERED BUT NO STUDIES HAVE BEEN DONE TO DATE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : ABOUT 60 PEOPLE HAVE USED THE GRANTS .

% HOMES WELL INSULATED : ABOUT 60% OF THE HOMES

COMMUNITY NAME : HOLBERG DND
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 650
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 116
COMMERCIAL - N/A
COMMUNITY - 2
INDUSTRIAL - 35

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	100	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	70	30	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 44 # ROOMS - N/A
OTHER - 72 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 115

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 3000 KW
YEAR INSTALLED - 81
OWNER - DND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 630 KW
CUBIC METERS OF FUEL USED PER YEAR - 1591
COST OF FUEL/LT - $ 0.300
COST AND FREQUENCY OF MAINTENANCE - $ 40000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.430
ELECTRICITY-CENTS/KWH - 5.3
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.430
REGULAR GAS PER LITRE - $ 0.478
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : ENERGY EXPLORATION LTD IS CURRENTLY DOING A STUDY. POTENTIAL APPEARS TO BE LOW.

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : MILITARY RADIO INSTALLATION

COMMUNITY NAME : HORNET
REGIONAL DISTRICT : FRASER-CHEAM

POPULATION : 30
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 30
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : THIS LOGGING CAMP OPERATED BY PACIFIC FOREST PRODUCTS DID NOT HAVE A QUESTIONNAIRE AVAILABLE

COMMUNITY NAME : ISKUT/EDDONTENAJON
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 250
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 -	UNEMPLOYED	- N/A
2 -	FORESTRY	- 15
3 -	N/A	
4 -	N/A	
5 -	N/A	

NUMBER OF BUILDINGS :
RESIDENTIAL - 80
COMMERCIAL - 2
COMMUNITY - 1
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	0	40	60	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 50	# ROOMS	- 2
# LOG	- 15	# ROOMS	- 2
# MASONRY	- 0	# ROOMS	- N/A
# TRAILER	- 15	# ROOMS	- 6
# OTHER	- 0	# ROOMS	- N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 800 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 125 KW
CUBIC METERS OF FUEL USED PER YEAR - 310
COST OF FUEL/LT - $ 0.313
COST AND FREQUENCY OF MAINTENANCE - $ 30000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO PLANS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - 4.5
PROPANE PER 100 lbs - $ 44.30
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - $ 0.530
FIREWOOD PER CORD - $ 65
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 400

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 5% OF THE HOMES

REMARKS : PREDOMINANTLY NATIVE COMMUNITY

COMMUNITY NAME : JUSKATLA
REGIONAL DISTRICT : SKEENA - QUEEN CHARLOTTE

POPULATION : 100
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 30
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 32
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	10	60	0	30	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 32 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 2416

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 700 KW
YEAR INSTALLED - N/A
OWNER - MAC. BLO.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 160 KW
CUBIC METERS OF FUEL USED PER YEAR - 467
COST OF FUEL/LT - $ 0.360
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE SO FAR

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.330
ELECTRICITY-CENTS/KWH - 12.0
PROPANE PER 100 lbs - $ 32.10
DIESEL FUEL PER LITRE - $ 0.360
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - $ 75
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : JOINT STUDY WITH BC HYDRO ON TIDAL POWER AT JUSKATLA INLET

ANY ENERGY CONSERVING SYSTEMS : COMPANY HAS USED WASTE HEAT RECOVERY

ENERGY GRANTS OR PROGRAMS : NO GRANTS BUT HOUSES HAVE BEEN UPGRADED

% HOMES WELL INSULATED : 100% OF THE HOMES ARE WELL INSULATED

REMARKS : COMMUNITY DRAWS EMPLOYEES FROM OTHER QUEEN CHARLOTTE AREA TOWNS SERVED BY BC HYDRO DIESEL SYSTEM

COMMUNITY NAME : KILBELLA BAY
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 1
SEASONAL VARIATION : 80

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 79
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 15
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	100	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 12 # ROOMS - 6
OTHER - 3 # ROOMS - 20

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 369

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 70 KW
YEAR INSTALLED - N/A
OWNER - CONTRACTOR
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 75 %
HOURS OF OPERATION PER DAY - 12
AVERAGE ENERGY PRODUCED - 65 KW
CUBIC METERS OF FUEL USED PER YEAR - 105
COST OF FUEL/LT - $ 0.341
COST AND FREQUENCY OF MAINTENANCE - $ 45000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.319
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 00.00
DIESEL FUEL PER LITRE - $ 0.341
REGULAR GAS PER LITRE - $ 0.341
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO ALREADY BEING USED . BURNING WOOD WASTE MIGHT BE A POSSIBILITY

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : 0% OF THE TRAILERS ARE WELL INSULATED

REMARKS : LOCAL SMALL HYDRO POWER IS NOR FIRM. CAMP IS OPERATED FOR 9 MONTHS OF THE YEAR

COMMUNITY NAME : KINGCOME INLET
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 120
SEASONAL VARIATION : 55

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - FISHING
3 - OTHER
4 - TOURISM/RECREATION
5 - AGRICULTURE/RANCHING

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - 20
2 - FORESTRY - 10
3 - FORESTRY - 7
4 - FISHING - 3
5 - FORESTRY - 3

NUMBER OF BUILDINGS :
RESIDENTIAL - 24
COMMERCIAL - 1
COMMUNITY - 3
INDUSTRIAL - 0

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	90	8	2	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	75	0	25	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 24 # ROOMS - 6
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 68

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 75 KW
YEAR INSTALLED - N/A
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 0
AVERAGE ENERGY PRODUCED - 20 KW
CUBIC METERS OF FUEL USED PER YEAR - .66
COST OF FUEL/LT - $ 0.520
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : CONSTUCTION OF 30 NEW HOMES OVER 5 YEARS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - 5.5
PROPANE PER 100 lbs - $ 35.00
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - $ 0.475
FIREWOOD PER CORD - $ 75
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 950

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NO - A SMALL HYDRO UNIT OF 75 kw CAPACITY HAS RECENTLY BEEN INSTALLED

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 10% OF THE HOMES

REMARKS : UNTIL RECENTLY FEW OF THE HOMES HAD ELECTRIC POWER AND USAGE IS EXPECTED TO GROW. NATIVE COMMUNITY

COMMUNITY NAME : KINGCOME INLET (WHONNOCK)
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 45
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 8
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	80	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	80	20	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 3 $ ROOMS - 2
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 5 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 60
OWNER - WHONNOCK
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 124 KW
CUBIC METERS OF FUEL USED PER YEAR - 364
COST OF FUEL/LT - $ 0.357
COST AND FREQUENCY OF MAINTENANCE - $ 3000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.308
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.355
REGULAR GAS PER LITRE - $ 0.390
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NONE

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : LOGGING CAMP NEAR NATIVE COMMUNITY

COMMUNITY NAME : KITKATLA
REGIONAL DISTRICT : SKEENA-QUEEN CHARLOTTE

POPULATION : 463
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - FISHING - 30
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 95
COMMERCIAL - 1
COMMUNITY - 5
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	15	85	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 95 # ROOMS - 6
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 650 KW
YEAR INSTALLED - 81
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 85 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 115 KW
CUBIC METERS OF FUEL USED PER YEAR - 346
COST OF FUEL/LT - $ 0.460
COST AND FREQUENCY OF MAINTENANCE - $ 13000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : HAVE ASKED BC HYDRO TO OPERATE DIESEL

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.460
ELECTRICITY-CENTS/KWH - 6.0
PROPANE PER 100 lbs - $ 35.00
DIESEL FUEL PER LITRE - $ 0.460
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1536

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO APPEARS TO BE TOO EXPENSIVE . TIDAL AND WIND POWER APPEAR TO BE POSSIBLE.

ANY ENERGY CONSERVING SYSTEMS : NO BUT NEW HOMES ARE BEING BUILT BEYOND STANDARDS

ENERGY GRANTS OR PROGRAMS : 5% HAVE USED CHIP GRANTS - HOPE TO ACHIEVE 25%

% HOMES WELL INSULATED : ABOUT 30% OF THE HOMES

REMARKS : NATIVE COMMUNITY ON ISLAND

COMMUNITY NAME : KLEMTU
REGIONAL DISTRICT : KITIMAT - STIKINE

POPULATION : 309
SEASONAL VARIATION : 11

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - FISHING
3 - SERVICES
4 - TOURISM/RECREATION
5 - MANUFACTURING

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED	-	N/A
2 - FORESTRY	-	38
3 - FISHING	-	31
4 - SERVICES	-	3
5 - FORESTRY	-	3

NUMBER OF BUILDINGS :

RESIDENTIAL	-	57
COMMERCIAL	-	4
COMMUNITY	-	4
INDUSTRIAL	-	1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	50	50	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 51	# ROOMS - 4
# LOG	- 0	# ROOMS - N/A
# MASONRY	- 4	# ROOMS - 3
# TRAILER	- 2	# ROOMS - 2
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 250 KW
YEAR INSTALLED - 82
OWNER - BAND - HYDRO UNIT
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 75 %
HOURS OF OPERATION PER DAY - 0
AVERAGE ENERGY PRODUCED - 10 KW
CUBIC METERS OF FUEL USED PER YEAR - 30
COST OF FUEL/LT - $ 0.300
COST AND FREQUENCY OF MAINTENANCE - $ 15000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : YES - 2ND HYDRO UNIT HOPEFULLY IN BY 84

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.450
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- $ 54.00
DIESEL FUEL PER LITRE	- $ 0.500
REGULAR GAS PER LITRE	- $ 0.500
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 240

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : RECENTLY INSTALLED A SMALL HYDRO POWER UNIT

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : YES - CHIP GRANTS HAVE BEEN USED

% HOMES WELL INSULATED : ABOUT 35 PERCENT ARE WELL INSULATED

REMARKS : ELECTRICITY COST $20/MONTH. 2ND HYDRO UNIT COULD PROVIDE POWER FOR INDUSTRIAL EXPANSION AND SOME SPACE HEAT

COMMUNITY NAME : KNIGHT INLET
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 13
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 0	# ROOMS - N/A
# LOG	- 0	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 0	# ROOMS - N/A
# OTHER	- 10	# ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : KYUQUOT
REGIONAL DISTRICT : COMOX - STRATHCONA

POPULATION : 300
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - FORESTRY
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - FISHING		- N/A
2 - FORESTRY		- N/A
3 - N/A		
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :
RESIDENTIAL - 70
COMMERCIAL - 1
COMMUNITY - 2
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

% WOOD FRAME - 70		% ROOMS - 5
% LOG - 0		% ROOMS - N/A
% MASONRY - 0		% ROOMS - N/A
% TRAILER - 0		% ROOMS - N/A
% OTHER - 0		% ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 62 KW
YEAR INSTALLED - N/A
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 30 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - $ 0.070
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : BC HYDRO INSTALLED A WIND RECORDER IN 82

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.460
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- $ 50.00
DIESEL FUEL PER LITRE	- $ 0.460
REGULAR GAS PER LITRE	- $ 0.470
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : TIDAL AND SMALL HYDRO POWER MIGHT HAVE SOME POTENTIAL

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : MIXED NATIVE AND FISHING COMMUNITY. MANY PRIVATE GENERATORS USED

COMMUNITY NAME : LASQUETI ISLAND
REGIONAL DISTRICT : POWELL RIVER REGIONAL DISTRICT

POPULATION : 327
SEASONAL VARIATION : 320

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - FORESTRY
3 - AGRICULTURE/RANCHING
4 - SERVICES
5 - MANUFACTURING

PREDOMINANT OCCUPATIONS :

1 -	UNEMPLOYED	- N/A
2 -	FISHING	- 40
3 -	AGRICULTURE/RANCHING	- 35
4 -	FORESTRY	- 26
5 -	FORESTRY	- 20

NUMBER OF BUILDINGS :
RESIDENTIAL - 125
COMMERCIAL - 4
COMMUNITY - 3
INDUSTRIAL - 16

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	99	1	0	0	0	0
COMMERCIAL	100	0	0	0	0	0
COMMUNITY	25	75	0	0	0	0
INDUSTRIAL	99	1	0	0	0	0

DWELLING DESCRIPTION :

# WOOD FRAME	- 110	# ROOMS - 4
# LOG	- 10	# ROOMS - 5
# MASONRY	- 2	# ROOMS - 10
# TRAILER	- 4	# ROOMS - 2
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.550
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- $ 35.00
DIESEL FUEL PER LITRE	- $ 0.528
REGULAR GAS PER LITRE	- $ 0.572
FIREWOOD PER CORD	- $ 75
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : WIND GENERATORS, SOLAR PANELS, AND WATER WHEELS HAVE BEEN USED. SOME HOMES ARE ENERGY CONSERVING

ENERGY GRANTS OR PROGRAMS : ABOUT 10-12 PEOPLE HAVE APPLIED

% HOMES WELL INSULATED : ABOUT 50% OF THE HOMES

REMARKS : SPREAD OUT COMMUNITY WITH NO CENTRAL GENERATION. RESIDENTS OFTEN CHOOSE AN ALTERNATE LIFESTYLE AND THE MAJORITY DO NOT DESIRE AN ELECTRICAL SYSTEM

COMMUNITY NAME : LONGWORTH
REGIONAL DISTRICT : FRASER-FORT GEORGE

POPULATION : 53
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : RANCHING COMMUNITY. NO QUESTIONNAIRE RESULTS WERE OBTAINABLE

COMMUNITY NAME : LOWER POST
REGIONAL DISTRICT : PEACE RIVER-LIARD

POPULATION : 123
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 40
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME - N/A	# ROOMS - N/A
# LOG - N/A	# ROOMS - N/A
# MASONRY - N/A	# ROOMS - N/A
# TRAILER - N/A	# ROOMS - N/A
# OTHER - N/A	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

NO CENTRAL DIESEL-ELECTRIC GENERATOR INFORMATION AVAILABLE

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : ALASKA HIGHWAY COMMUNITY. NO QUESTIONNAIRE RESULTS WERE OBTAINABLE

COMMUNITY NAME : HACHMELL
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 13
3 - FORESTRY - 3
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : MAHATTA RIVER
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 185
SEASONAL VARIATION : 20

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 91
2 - SERVICES - 3
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 53
COMMERCIAL - 1
COMMUNITY - 3
INDUSTRIAL - 6

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	4	96	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 19 # ROOMS - 6
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 34 # ROOMS - 5
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 71

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 350 KW
YEAR INSTALLED - 77
OWNER - WESTERN FOREST PR
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 200 KW
CUBIC METERS OF FUEL USED PER YEAR - 468
COST OF FUEL/LT - $ 0.320
COST AND FREQUENCY OF MAINTENANCE - $ 14000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : PLAN TO USE HEAT EXCHANGER ON GENERATOR

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.300
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 36.00
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - $ 0.365
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1300

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : YES - SMALL HYDRO MIGHT BE A POSSIBILITY . WIND POWER IS ANOTHER

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : CHIP GRANTS HAVE BEEN USED ON 10 HOUSES

% HOMES WELL INSULATED : ALL HOMES ARE POORLY INSULATED

REMARKS : LOGGING COMMUNITY

COMMUNITY NAME : MANNING PROVINCIAL PARK
REGIONAL DISTRICT : OKANAGAN-SIMILKAMEEN

POPULATION : 78
SEASONAL VARIATION : 86

PREDOMINANT ECONOMIC ACTIVITIES :
1 - TOURISM/RECREATION
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - SERVICES - 63
2 - TOURISM/RECREATION - 48
3 - FORESTRY - 10
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 63
COMMERCIAL - 21
COMMUNITY - N/A
INDUSTRIAL - 19

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	30	2	68	0	0
COMMERCIAL	0	10	0	90	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	7	13	80	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 63 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 140

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 600 KW
YEAR INSTALLED - 78
OWNER - PARKS
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 355 KW
CUBIC METERS OF FUEL USED PER YEAR - 730
COST OF FUEL/LT - $ 0.328
COST AND FREQUENCY OF MAINTENANCE - $ 19564 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : STUDIES TO TRANSMIT POWER - BC HYDRO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.278
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 21.50
DIESEL FUEL PER LITRE - $ 0.328
REGULAR GAS PER LITRE - $ 0.371
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : WOOD HEATERS COULD HAVE POTENTIAL, HEAT RECOVERY, SMALL HYDRO, AND GRID TIE-IN ARE BEING CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 10% COULD BE CLASSIFIED AS OPTIMAL

REMARKS : ADDITIONAL ENERGY USE TOWARDS OPERATION OF 50 UNIT MOTEL

COMMUNITY NAME : MASSET
REGIONAL DISTRICT : SKEENA - QUEEN CHARLOTTE

POPULATION : 3000
SEASONAL VARIATION : 350

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - OTHER
3 - FISHING
4 - SERVICES
5 - MANUFACTURING

PREDOMINANT OCCUPATIONS :

1 - FORESTRY	- N/A
2 - UNEMPLOYED	- N/A
3 - FISHING	- N/A
4 - SERVICES	- N/A
5 - MANUFACTURING	- N/A

NUMBER OF BUILDINGS :

RESIDENTIAL	- 1078
COMMERCIAL	- 25
COMMUNITY	- 5
INDUSTRIAL	- 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	15	70	10	5	0	0
COMMERCIAL	12	88	0	0	0	0
COMMUNITY	20	80	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :

# WOOD FRAME	- 972	# ROOMS - 7
# LOG	- 5	# ROOMS - N/A
# MASONRY	- 5	# ROOMS - 5
# TRAILER	- 93	# ROOMS - 5
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 9921 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 2240 KW
CUBIC METERS OF FUEL USED PER YEAR - 4760
COST OF FUEL/LT - $ 0.291
COST AND FREQUENCY OF MAINTENANCE - $ 587000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : BC HYDRO IS STUDING WIND POWER

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.340
ELECTRICITY-CENTS/KWH	- 4.5
PROPANE PER 100 lbs	- $ 40.00
DIESEL FUEL PER LITRE	- $ 0.430
REGULAR GAS PER LITRE	- $ 0.450
FIREWOOD PER CORD	- $ 50
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 2600

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : BC HYDRO HAS LOOKED AT WIND, TIDAL, SMALL HYDRO, WOOD WASTE, AND COAL POWER, BUT HAS NO PLANS YET

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : 1 PERSON HAS USED A GRANT

% HOMES WELL INSULATED : ABOUT 40% ARE WELL INSULATED

REMARKS : SOME RESIDENTS SUPPLEMENT OIL HEAT WITH WOOD HEAT. AREA SERVED INCLUDES PORT CLEMENTS AND DND RADIO INSTALLATION

COMMUNITY NAME : MCNAB CAMP
REGIONAL DISTRICT : SUNSHINE COAST

POPULATION : 8
SEASONAL VARIATION : 22

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 30
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 3
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	100	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 2 # ROOMS - 4
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 1 # ROOMS - 6
OTHER - 3 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 724

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 50 KW
YEAR INSTALLED - 69
OWNER - CANADIAN F. P.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 40 KW
CUBIC METERS OF FUEL USED PER YEAR - 117
COST OF FUEL/LT - $ 0.3o6
COST AND FREQUENCY OF MAINTENANCE - $ 15000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : INVESTIGATING SMALL HYDRO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.367
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 67.00
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : LOOKING AT THE POSSIBILITY OF USING SMALL HYDRO POWER

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 90% ARE WELL INSULATED

REMARKS : ENERGY SUPPLIED BY LOGGING CAMP

COMMUNITY NAME : MEZIADIN LAKE - HIGHWAYS
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 17
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES : 1 - SERVICES
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS : 1 - SERVICES - 17
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS : RESIDENTIAL - 17
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	0	80	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION : # WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 17 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION : SIZE OF DIESEL-ELECTRIC GENERATOR - 500 KW
YEAR INSTALLED - N/A
OWNER - B.C.B.C
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 72 KW
CUBIC METERS OF FUEL USED PER YEAR - 210
COST OF FUEL/LT - $ 0.430
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : CHANGE SIZE OF GENERATORS AND HEAT RECL.

FUEL PRICES AT COMMUNITY : HEATING OIL PER LITRE - $ 0.430
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 21.60
DIESEL FUEL PER LITRE - $ 0.430
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO WAS STUDIED - PAYBACK PERIOD WAS TOO LONG

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE OF THE HOMES ARE WELL INSULATED

REMARKS : HIGHWAYS DEPARTMENT MAINTENANCE CAMP

COMMUNITY NAME : MOOYA BAY (NOOTKA)
REGIONAL DISTRICT : COMOX STRATHCONA

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 5

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST SR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 25 KW
CUBIC METERS OF FUEL USED PER YEAR - 144
COST OF FUEL/LI - $ 0.34¢
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : MOSES INLET
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 70
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES : 1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS : 1 - FORESTRY - 40
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS : RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	100	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	0	100	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION : # WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 3

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 930

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION : SIZE OF DIESEL-ELECTRIC GENERATOR - 100 KW
YEAR INSTALLED - 81
OWNER - CROWN ZELLERBACH
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 70 KW
CUBIC METERS OF FUEL USED PER YEAR - 113
COST OF FUEL/LT - $ 0.440
COST AND FREQUENCY OF MAINTENANCE - $ 2000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : SMALL HYDRO MAY BE STUDIED

FUEL PRICES AT COMMUNITY : HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.440
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : HEAT EXCHANGER MAY BE USED TO HEAT SHOP AREA

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : 100% ARE WELL INSULATED

REMARKS : LOGGING CAMP ON 9 MONTH OPERATION AND 20 YEAR PROJECTED LIFE

COMMUNITY NAME : NARROWS INLET LOGGING DIV.
REGIONAL DISTRICT : SUNSHINE COAST

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 10
3 - FORESTRY - 0
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 6

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST SR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 25 KW
CUBIC METERS OF FUEL USED PER YEAR - 10A
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.340
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 10.00
DIESEL FUEL PER LITRE - $ 0.300
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : NAZKO INDIAN BAND
REGIONAL DISTRICT : CARIBOO

POPULATION : 113
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - AGRICULTURE/RANCHING
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - 10
2 - FORESTRY - 9
3 - AGRICULTURE/RANCHING - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 40
COMMERCIAL - 0
COMMUNITY - 2
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 35 # ROOMS - 6
LOG - 5 # ROOMS - 6
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : GRID CONNECTION UNDER STUDY

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.600
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.600
REGULAR GAS PER LITRE - $ 0.600
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NO

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE OF THE HOMES ARE WELL INSULATED

REMARKS : NATIVE COMMUNITY AND RANCHING AREA. NO CENTRAL ELECTRICITY GENERATION. NO QUESTIONNAIRE RESPONSE FROM RANCHING AREA. ABOVE INFORMATION APPLIES TO NATIVE AR

COMMUNITY NAME : NEMAIAH VALLEY INDIAN BAND
REGIONAL DISTRICT : CARIBOO

POPULATION : 175
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - AGRICULTURE/RANCHING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - AGRICULTURE/RANCHING - N/A
3 - SERVICES - 4
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 33
COMMERCIAL - 0
COMMUNITY - 3
INDUSTRIAL - 0

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 6 # ROOMS - 6
LOG - 21 # ROOMS - 6
MASONRY - 0 # ROOMS - N/A
TRAILER - 6 # ROOMS - 6
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO PLANS FOR CHANGE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.600
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.600
REGULAR GAS PER LITRE - $ 0.600
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : WIND MILLS ARE A POSSIBILITY

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NO HOMES ARE WELL INSULATED

REMARKS : ISOLATED NATIVE COMMUNITY

COMMUNITY NAME : NICKNAQUEET
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 40
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : A QUESTIONNAIRE WAS NOT OBTAINABLE FROM THIS LOGGING CAMP

COMMUNITY NAME : NITINAHT
REGIONAL DISTRICT : COWICHAN VALLEY

POPULATION : 81
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 22
COMMERCIAL - 0
COMMUNITY - 5
INDUSTRIAL - 2

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	50	0	50	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 22 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 134 KW
YEAR INSTALLED - N/A
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 20 %
HOURS OF OPERATION PER DAY - 25
AVERAGE ENERGY PRODUCED - 26 KW
CUBIC METERS OF FUEL USED PER YEAR - 83
COST OF FUEL/LT - $ 0.364
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : SMALL HYDRO HAS BEEN CONSIDERED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.364
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A SMALL HYDRO STUDY IS CURRENTLY UNDERWAY . HOT SPRINGS IS ANOTHER POSSIBILITY

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : ABOUT 1% ARE WELL INSULATED

REMARKS : GENERATOR OPERATED 0700-2300 IN SCHOOL MONTHS. 1900-2300 IN SUMMER ELECTRICITY CHARGED AT $50/HOUSE/MONTH

COMMUNITY NAME : NUCHATLAHT
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 40
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 7
COMMERCIAL - N/A
COMMUNITY - 1
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 7 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 8 KW
YEAR INSTALLED - N/A
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 20 %
HOURS OF OPERATION PER DAY - 8
AVERAGE ENERGY PRODUCED - 8 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : NATIVE COMMUNITY. MOST OF ENERGY USED FOR SCHOOL

COMMUNITY NAME : OWIKENO
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FISHING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - FISHING - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 12
COMMERCIAL - N/A
COMMUNITY - 2
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	50	50	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 12 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 110 KW
YEAR INSTALLED - 82
OWNER - BAND
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 30 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - $ 0.506
COST AND FREQUENCY OF MAINTENANCE - $ 8000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : HOPE TO GET A SMALL HYDRO UNIT

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.506
ELECTRICITY-CENTS/KWH - 10.0
PROPANE PER 100 lbs - $ 35.00
DIESEL FUEL PER LITRE - $ 0.506
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1200

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN STUDIED . WOOD WASTE POTENTIAL

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NONE

% HOMES WELL INSULATED : NONE

REMARKS : NATIVE COMMUNITY

COMMUNITY NAME : PENNY
REGIONAL DISTRICT : FRASER FORT GEORGE

POPULATION : 74
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : RANCHING COMMUNITY - QUESTIONNAIRE RESULTS WERE NOT OBTAINABLE

COMMUNITY NAME : PHILLIPS ARM
REGIONAL DISTRICT : COMOX STRATHCONA

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 6

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : PITT LAKE
REGIONAL DISTRICT : DEWDNEY ALOUETTE

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : PORT DOUGLAS (HARRISON)
REGIONAL DISTRICT : FRASER CHEAM

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 3

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : PORTAGE (RANCUT)
REGIONAL DISTRICT : BULKLEY NECHAKO

POPULATION : 95
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - OTHER
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - FORESTRY - 5
3 - FORESTRY - N/A
4 - FORESTRY - 5
5 - AGRICULTURE/RANCHING - 1

NUMBER OF BUILDINGS :
RESIDENTIAL - 18
COMMERCIAL - 1
COMMUNITY - 4
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	98	2	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 23 # ROOMS - 4
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 5

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO PLANS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 20% ARE INSULATED TO STANDARDS

REMARKS : NATIVE COMMUNITY. NO CENTRAL ELECTRICAL GENERATION

COMMUNITY NAME : PROPHET RIVER
REGIONAL DISTRICT : PEACE RIVER-LIARD

POPULATION : 78
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - OTHER
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - UNEMPLOYED - N/A
2 - FORESTRY - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 13
COMMERCIAL - N/A
COMMUNITY - 4
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	92	0	0	8	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	0	0	100	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 16 # ROOMS - 4
LOG - 1 # ROOMS - 1
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 30 KW
YEAR INSTALLED - 83
OWNER - FEDERAL GOV'T
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 20 KW
CUBIC METERS OF FUEL USED PER YEAR - 36
COST OF FUEL/LT - $ 0.550
COST AND FREQUENCY OF MAINTENANCE - $ 2000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 25.00
DIESEL FUEL PER LITRE - $ 0.550
REGULAR GAS PER LITRE - $ 0.550
FIREWOOD PER CORD - $ 46
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A MAIN GAS LINE TRAVELS VERY CLOSE TO THE RESERVE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 60% ARE WELL INSULATED

REMARKS : NATIVE COMMUNITY ON ALASKA HIGHWAY

COMMUNITY NAME : QUATAM RIVER
REGIONAL DISTRICT : COMOX-STRATHCONA

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST SR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.343
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : SANDSPIT
REGIONAL DISTRICT : SKEENA-QUEEN CHARLOTTE

POPULATION : 2850
SEASONAL VARIATION : 300

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - FISHING
3 - SERVICES
4 - TOURISM/RECREATION
5 - TRANSPORTATION

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - N/A
2 - FISHING - N/A
3 - SERVICES - N/A
4 - TOURISM/RECREATION - N/A
5 - TRANSPORTATION - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 800
COMMERCIAL - 32
COMMUNITY - 12
INDUSTRIAL - 6

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	25	70	5	0	0	0
COMMERCIAL	0	75	25	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 700 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 100 # ROOMS - 1
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 7900 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 21
AVERAGE ENERGY PRODUCED - 2298 kW
CUBIC METERS OF FUEL USED PER YEAR - 4770
COST OF FUEL/LI - $ 0.291
COST AND FREQUENCY OF MAINTENANCE - $ [illegible] PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.340
ELECTRICITY-CENTS/KWH - 4.3
PROPANE PER 100 lbs - $ 40.00
DIESEL FUEL PER LITRE - $ 0.410
REGULAR GAS PER LITRE - $ 0.509
FIREWOOD PER CORD - $ 60
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 2640

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : BC HYDRO HAS STUDIED MOST ENERGY ALTERNATIVES INCLUDING WIND POWER

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : 1 HOUSEHOLD HAS APPLIED FOR A GRANT

% HOMES WELL INSULATED : 40% OF THE HOMES ARE WELL INSULATED

REMARKS : INCLUDES QUEEN CHARLOTTE CITY

COMMUNITY NAME : SAVARY ISLAND
REGIONAL DISTRICT : POWELL RIVER

POPULATION : 31
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : QUESTIONNAIRE RESULTS WERE NOT OBTAINABLE. ADDITIONAL PEOPLE HAVE RECREATIONAL PROPERTY ON THE ISLAND

COMMUNITY NAME : SCOTT COVE
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 45
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 8
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	80	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	80	20	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 3 # ROOMS - 2
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 5 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 60
OWNER - WHONNOCK
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 12% KW
CUBIC METERS OF FUEL USED PER YEAR - 364
COST OF FUEL/LT - $ 0.357
COST AND FREQUENCY OF MAINTENANCE - $ 3000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.308
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.305
REGULAR GAS PER LITRE - $ 0.390
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NONE

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : SCOTTY GOLD
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 80
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : SOME WORKERS AT THIS MINE CAMP LIVE IN NEARBY STEWART. ADDITIONAL QUESTIONNAIRE INFORMATION WAS NOT OBTAINABLE

COMMUNITY NAME : SECHELL CREEK
REGIONAL DISTRICT : SUNSHINE COAST

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 6

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : SEWELL INLET
REGIONAL DISTRICT : SKEENA-QUEEN CHARLOTTE

POPULATION : 182
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 182
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 40
COMMERCIAL - N/A
COMMUNITY - 1
INDUSTRIAL - 9

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	8	92	0	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 20 # ROOMS - 6
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 20 # ROOMS - 6
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 909

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 750 KW
YEAR INSTALLED - 69
OWNER - WESTERN F. P.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 183 KW
CUBIC METERS OF FUEL USED PER YEAR - 536
COST OF FUEL/LT - $ 0.400
COST AND FREQUENCY OF MAINTENANCE - $ 20000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : CONSIDERING SMALL HYDRO AND WINDMILLS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.326
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.400
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER AND WIND POWER

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : 3 HOMES HAVE USED THE COSP GRANT

% HOMES WELL INSULATED : 50% OF THE HOMES ARE WELL INSULATED

REMARKS : LOGGING CAMP

COMMUNITY NAME : SEYMOUR ARM
REGIONAL DISTRICT : COLUMBIA SHUSWAP

POPULATION : 67
SEASONAL VARIATION : 300

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - TOURISM/RECREATION
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - N/A
2 - TOURISM/RECREATION - N/A
3 - UNEMPLOYED - N/A
4 - AGRICULTURE/RANCHING - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 150
COMMERCIAL - 5
COMMUNITY - 1
INDUSTRIAL - 4

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	90	0	1	9	0	0
COMMERCIAL	20	20	0	0	0	0
COMMUNITY	100	0	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 143 # ROOMS - 5
LOG - 16 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 1 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : SMALL HYDRO - GRID EXTENSION - DIESELS

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.440
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 26.00
DIESEL FUEL PER LITRE - $ 0.440
REGULAR GAS PER LITRE - $ 0.500
FIREWOOD PER CORD - $ 70
COAL PER KILOGRAM - N/A
OTHER : KEROSENE - 495

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : ONE FAMILY IS BUILDING A SMALL HYDRO UNIT. SOLAR POWER IS USED TO RECHARGE SOME BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : PERMANENT RESIDENTS ARE WELL INSULATED

REMARKS : NO CENTRAL GENERATION. MANY RESIDENTS USE THEIR PROPERTY FOR RECREATION

COMMUNITY NAME : SEYMOUR INLET
REGIONAL DISTRICT : MT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 45
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 8
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	20	80	0	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	80	20	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 3 # ROOMS - 2
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 5 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 60
OWNER - WHONNOCK
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 124 KW
CUBIC METERS OF FUEL USED PER YEAR - 341
COST OF FUEL/LT - $ 0.357
COST AND FREQUENCY OF MAINTENANCE - $ 3000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO CHANGES PLANNED

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.308
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - $ 0.355
REGULAR GAS PER LITRE - $ 0.390
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : NONE

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : SHEEMAHANT
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 2
SEASONAL VARIATION : 60

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 59
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 5
COMMERCIAL - 1
COMMUNITY - 1
INDUSTRIAL - 4

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	100	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 2 # ROOMS - 4
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 3 # ROOMS - N/A
OTHER - 3 # ROOMS - 30

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 394

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 575 KW
YEAR INSTALLED - 77
OWNER - PACIFIC FOREST PR
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 12
AVERAGE ENERGY PRODUCED - 65 KW
CUBIC METERS OF FUEL USED PER YEAR - 100
COST OF FUEL/LT - $ 0.411
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.378
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 20.00
DIESEL FUEL PER LITRE - $ 0.411
REGULAR GAS PER LITRE - $ 0.420
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : CONSIDERING USING SMALL HYDRO

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : 0% OF THE HOMES ARE WELL INSULATED

REMARKS : LOGGING CAMP

COMMUNITY NAME : SHOTBOLT
REGIONAL DISTRICT : CENTRAL COAST

POPULATION : 40
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : QUESTIONNAIRE RESULTS FOR THIS LOGGING CAMP WERE NOT OBTAINABLE

COMMUNITY NAME : SIMOON SOUND
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 32
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - TOURISM/RECREATION
2 - FORESTRY
3 - FISHING
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - TOURISM/RECREATION - N/A
2 - FORESTRY - N/A
3 - FISHING - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.415
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 60.00
DIESEL FUEL PER LITRE - $ 0.495
REGULAR GAS PER LITRE - $ 0.559
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : KEROSENE - 473

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SOME SMALL SCALE EXPERIMENTATION BY INDIVIDUALS FOR WIND AND WATER POWER

ANY ENERGY CONSERVING SYSTEMS : MEETINGS HAVE BEEN HELD TO DISCUSS ALTERNATIVE ENERGY UTILIZATION

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : NO CENTRAL ELECTRICITY GENERATION

COMMUNITY NAME : STAVE LAKE
REGIONAL DISTRICT : DEWDNEY-ALOUETTE

POPULATION : 50
SEASONAL VARIATION : 10

PREDOMINANT ECONOMIC ACTIVITIES :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 12
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	50	0	50	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 12 # ROOMS - N/A
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 110 KW
YEAR INSTALLED - N/A
OWNER - B.C.B.C.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 25 KW
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : 0% ARE WELL INSULATED

REMARKS : CORRECTIONS BRANCH WORK CAMP. FUEL COSTS WERE UNAVAILABLE AS RECORDS WERE INCOMPLETE

COMMUNITY NAME : STEWART
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 1456
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - TOURISM/RECREATION
3 - FORESTRY
4 - TRANSPORTATION
5 - SERVICES

PREDOMINANT OCCUPATIONS :

1 - MINING	- N/A
2 - TOURISM/RECREATION	- N/A
3 - FORESTRY	- N/A
4 - TRANSPORTATION	- N/A
5 - SERVICES	- N/A

NUMBER OF BUILDINGS :

RESIDENTIAL	- 430
COMMERCIAL	- 16
COMMUNITY	- 2
INDUSTRIAL	- 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	30	40	10	15	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 200	# ROOMS - 6
# LOG	- 0	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 230	# ROOMS - 6
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 7247 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 1735 KW
CUBIC METERS OF FUEL USED PER YEAR - 4000
COST OF FUEL/LT - $ 0.286
COST AND FREQUENCY OF MAINTENANCE - $ 169000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : SMALL HYDRO IS A POSSIBILITY

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.360
ELECTRICITY-CENTS/KWH	- 4.5
PROPANE PER 100 lbs	- $ 30.00
DIESEL FUEL PER LITRE	- $ 0.470
REGULAR GAS PER LITRE	- $ 0.480
FIREWOOD PER CORD	- N/A
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 2100

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : PROBABLY

% HOMES WELL INSULATED : 25% OF THE HOMES ARE WELL INSULATED

REMARKS : COMMUNITY POPULATION FLUCTUATES WITH MINING ACTIVITY

COMMUNITY NAME : TAKLA
REGIONAL DISTRICT : BULKLEY NECHAKO

POPULATION : 208
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - MINING
3 - TOURISM/RECREATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - UNEMPLOYED		- N/A
2 - FORESTRY		- N/A
3 - MINING		- N/A
4 - N/A		
5 - N/A		

NUMBER OF BUILDINGS :

RESIDENTIAL	- 50
COMMERCIAL	- 4
COMMUNITY	- 5
INDUSTRIAL	- 0

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	100	0	0	0	0	0
COMMERCIAL	100	0	0	0	0	0
COMMUNITY	34	33	33	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME -	45	# ROOMS - 5
# LOG -	5	# ROOMS - 5
# MASONRY -	0	# ROOMS - N/A
# TRAILER -	0	# ROOMS - N/A
# OTHER -	0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 27

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : YES - BC HYDRO POWER TO COME IN 83/84

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE -	$ 0.660
ELECTRICITY-CENTS/KWH -	N/A
PROPANE PER 100 lbs -	$ 20.00
DIESEL FUEL PER LITRE -	$ 0.660
REGULAR GAS PER LITRE -	$ 0.550
FIREWOOD PER CORD -	N/A
COAL PER KILOGRAM -	N/A
OTHER : -	N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 1

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : NONE

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : PRESENTLY ONLY THE SCHOOL HAS A 25 KW GENERATOR

COMMUNITY NAME : TATLA LAKE
REGIONAL DISTRICT : CARIBOO

POPULATION : 37
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - AGRICULTURE/RANCHING
2 - TOURISM/RECREATION
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - AGRICULTURE/RANCHING - N/A
2 - TOURISM/RECREATION - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 20
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	90	5	0	5	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	100	0	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1000 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 122 KW
CUBIC METERS OF FUEL USED PER YEAR - 370
COST OF FUEL/LT - $ 0.293
COST AND FREQUENCY OF MAINTENANCE - $ 31208 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.330
ELECTRICITY-CENTS/KWH - 4.3
PROPANE PER 100 lbs - $ 31.00
DIESEL FUEL PER LITRE - $ 0.506
REGULAR GAS PER LITRE - $ 0.550
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : INFORMATION ON THE COMMUNITY FROM LOCAL BC HYDRO PERSONNEL WAS NOT OBTAINABLE AND THE REGIONAL DISTRICT RESPONSE WAS INCOMPLETE

COMMUNITY NAME : TELEGRAPH CREEK
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 350
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - TOURISM/RECREATION
4 - OTHER
5 - FISHING

PREDOMINANT OCCUPATIONS :

1 - FORESTRY		- 100
2 - TOURISM/RECREATION		- 15
3 - SERVICES		- 8
4 - FISHING		- 7
5 - FORESTRY		- 8

NUMBER OF BUILDINGS :

RESIDENTIAL	- 58
COMMERCIAL	- 5
COMMUNITY	- 6
INDUSTRIAL	- N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	98	2	0	0	0	0
COMMERCIAL	0	50	0	50	0	0
COMMUNITY	95	0	5	0	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 18	# ROOMS - 5
# LOG	- 40	# ROOMS - 4
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 0	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1150 KW
YEAR INSTALLED - N/A
OWNER - BC HYDRO
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 114 KW
CUBIC METERS OF FUEL USED PER YEAR - 366
COST OF FUEL/LT - $ 0.343
COST AND FREQUENCY OF MAINTENANCE - $ 33600 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : HOPE TO MAKE COMMUNITY SELF-SUFFICIENT

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.350
ELECTRICITY-CENTS/KWH	- 4.5
PROPANE PER 100 lbs	- $ 35.00
DIESEL FUEL PER LITRE	- $ 0.550
REGULAR GAS PER LITRE	- $ 0.630
FIREWOOD PER CORD	- $ 70
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : $ 900

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO MAY SHOW SOME POTENTIAL

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : 95% OF THE HOMES ARE WELL INSULATED

REMARKS : NATIVE COMMUNITY

COMMUNITY NAME : TIDE LAKE
REGIONAL DISTRICT : KITIMAT-STIKINE

POPULATION : 125
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - 125
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - N/A
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - N/A # ROOMS - N/A
LOG - N/A # ROOMS - N/A
MASONRY - N/A # ROOMS - N/A
TRAILER - N/A # ROOMS - N/A
OTHER - N/A # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : N/A

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : N/A

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : NINE CAMP NEAR STEWART. QUESTIONNAIRE RESULTS WERE NOT OBTAINABLE ALTHOUGH ENERGY USE IS EXPECTED TO BE HIGH DUE TO LOCATION AND INDUSTRIAL USE

COMMUNITY NAME : TIMFOR
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : TOAD RIVER AREA
REGIONAL DISTRICT : PEACE RIVER - LIARD

POPULATION : 80
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - SERVICES
2 - TOURISM/RECREATION
3 - AGRICULTURE/RANCHING
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - SERVICES - 10
2 - TOURISM/RECREATION - 6
3 - AGRICULTURE/RANCHING - 8
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 25
COMMERCIAL - 2
COMMUNITY - 1
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	80	20	0	0	0	0
COMMERCIAL	0	100	0	0	0	0
COMMUNITY	0	0	0	100	0	0
INDUSTRIAL	0	100	0	0	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 13 # ROOMS - 4
LOG - 8 # ROOMS - 3
MASONRY - 0 # ROOMS - N/A
TRAILER - 4 # ROOMS - 4
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.460
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 26.80
DIESEL FUEL PER LITRE - $ 0.540
REGULAR GAS PER LITRE - $ 0.639
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A SMALL HYDRO SITE ON THE NEARBY TOAD RIVER MAY BE POSSIBLE - A WIND GENERATOR HAS POTENTIAL ALSO

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : N/A

REMARKS : NO CENTRAL ELECTRICITY SUPPLY

COMMUNITY NAME : TOM BROWN LAKE
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 13
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 6

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST SR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 114
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY IS PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : TROUT LAKE
REGIONAL DISTRICT : COLUMBIA - SHUSWAP

POPULATION : 50
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - MINING
3 - TOURISM/RECREATION
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :

1 - FORESTRY	- 20
2 - MINING	- 10
3 - SERVICES	- 20
4 - N/A	
5 - N/A	

NUMBER OF BUILDINGS :

RESIDENTIAL	- 35
COMMERCIAL	- 2
COMMUNITY	- 2
INDUSTRIAL	- 1

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	90	0	0	10	0	0
COMMERCIAL	0	50	0	50	0	0
COMMUNITY	0	0	0	100	0	0
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :

# WOOD FRAME	- 20	# ROOMS - N/A
# LOG	- 5	# ROOMS - N/A
# MASONRY	- 0	# ROOMS - N/A
# TRAILER	- 10	# ROOMS - N/A
# OTHER	- 0	# ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - N/A
YEAR INSTALLED - N/A
OWNER - N/A
% OF COMMUNITY'S NEEDS MET BY GENERATOR - N/A
HOURS OF OPERATION PER DAY - N/A
AVERAGE ENERGY PRODUCED - N/A
CUBIC METERS OF FUEL USED PER YEAR - N/A
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NONE

FUEL PRICES AT COMMUNITY :

HEATING OIL PER LITRE	- $ 0.335
ELECTRICITY-CENTS/KWH	- N/A
PROPANE PER 100 lbs	- N/A
DIESEL FUEL PER LITRE	- $ 0.401
REGULAR GAS PER LITRE	- $ 0.483
FIREWOOD PER CORD	- $ 65
COAL PER KILOGRAM	- N/A
OTHER :	- N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : A SMALL HYDRO SITE MAY BE POSSIBLE ON HUMPHRIES CREEK

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : ABOUT 50%

REMARKS : DEPARTMENT OF HIGHWAYS MAINTENANCE FACILITY IS PART OF THE COMMUNITY. NO CENTRAL ELECTRIC GENERATION

COMMUNITY NAME : VERNON
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 251
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - N/A
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 74
COMMERCIAL - 7
COMMUNITY - N/A
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	50	0	50	0	0
COMMERCIAL	0	50	0	50	0	0
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 50 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 24 # ROOMS - 6
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 600 KW
YEAR INSTALLED - 82
OWNER - CANADIAN F. P.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 250 KW
CUBIC METERS OF FUEL USED PER YEAR - 730
COST OF FUEL/LT - $ 0.380
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.360
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 26.80
DIESEL FUEL PER LITRE - $ 0.380
REGULAR GAS PER LITRE - $ 0.490
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : MINI-HYDRO SYSTEM SHOWS HIGH POTENTIAL . A 230 kv LINE IS LOCATED ONLY 400 METERS FROM COMMUNITY

ANY ENERGY CONSERVING SYSTEMS : N/A

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : YEAR ROUND LOGGING COMMUNITY. ELECTRICITY PROVIDED FREE TO RESIDENTS

COMMUNITY NAME : WAKEMAN SOUND
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 45
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - OTHER
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 40
2 - SERVICES - 15
3 - FORESTRY - 5
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 10
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 3

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	0	0	100	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	N/A	N/A	N/A	N/A	N/A	N/A

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 10 # ROOMS - 8

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : 120

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 125 KW
YEAR INSTALLED - 81
OWNER - BC FOREST PR.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 75 KW
CUBIC METERS OF FUEL USED PER YEAR - 146
COST OF FUEL/LT - $ 0.344
COST AND FREQUENCY OF MAINTENANCE - $ 11000 PER YEAR

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : SMALL HYDRO POWER HAS BEEN CONSIDERED

ANY ENERGY CONSERVING SYSTEMS : YES - USE SOLAR PANELS TO CHARGE RADIO REPEATERS STORAGE BATTERIES

ENERGY GRANTS OR PROGRAMS : NO

% HOMES WELL INSULATED : NONE

REMARKS : ENERGY PROVIDED BY THE COMPANY AT THIS LOGGING CAMP

COMMUNITY NAME : WESTERN MINES (MYRA FALLS)
REGIONAL DISTRICT : COMOX - STRATHCONA

POPULATION : 30
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - MINING
2 - N/A
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - MINING - 30
2 - N/A
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 3
COMMERCIAL - N/A
COMMUNITY - N/A
INDUSTRIAL - 17

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	70	0	30	0	0
COMMERCIAL	N/A	N/A	N/A	N/A	N/A	N/A
COMMUNITY	N/A	N/A	N/A	N/A	N/A	N/A
INDUSTRIAL	0	60	20	20	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 0 # ROOMS - N/A
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 0 # ROOMS - N/A
OTHER - 3 # ROOMS - 10

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 2000 KW
YEAR INSTALLED - 65
OWNER - WESTMIN RESOURSES
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 25 %
HOURS OF OPERATION PER DAY - 21
AVERAGE ENERGY PRODUCED - 440 KW
CUBIC METERS OF FUEL USED PER YEAR - 1200
COST OF FUEL/LT - N/A
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : MINE EXPANSION INCLUDES NEW HYDRO SITE

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - N/A
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - N/A
DIESEL FUEL PER LITRE - N/A
REGULAR GAS PER LITRE - N/A
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : PLAN TO DEVELOP A NEW HYDRO SITE AND IMPROVE THE EXISTING ONE - PROJECT USAGE 57,000,000 KWH/YEAR

ANY ENERGY CONSERVING SYSTEMS : NO

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : MOST OF THE WORKERS COMMUTE FROM CAMPBELL RIVER. SMALL HYDRO PLANT PROVIDES MUCH OF THE ENERGY

COMMUNITY NAME : WOSS
REGIONAL DISTRICT : MOUNT WADDINGTON

POPULATION : 548
SEASONAL VARIATION : N/A

PREDOMINANT ECONOMIC ACTIVITIES :
1 - FORESTRY
2 - SERVICES
3 - N/A
4 - N/A
5 - N/A

PREDOMINANT OCCUPATIONS :
1 - FORESTRY - 271
2 - SERVICES - 20
3 - N/A
4 - N/A
5 - N/A

NUMBER OF BUILDINGS :
RESIDENTIAL - 146
COMMERCIAL - 15
COMMUNITY - 3
INDUSTRIAL - N/A

SHARE (%) OF EACH HEATING METHOD USED :

	WOOD	OIL	ELECT	PROPANE	COAL	OTHER
RESIDENTIAL	0	49	2	49	0	0
COMMERCIAL	0	49	2	49	0	0
COMMUNITY	0	49	2	49	0	0
INDUSTRIAL	0	49	2	49	0	0

DWELLING DESCRIPTION :
WOOD FRAME - 70 # ROOMS - 5
LOG - 0 # ROOMS - N/A
MASONRY - 0 # ROOMS - N/A
TRAILER - 76 # ROOMS - 5
OTHER - 0 # ROOMS - N/A

CUBIC METERS OF FUEL USED FOR TRANSPORTATION : N/A

MAINTENANCE COST OF FUEL USING DEVICES : N/A

DIESEL GENERATOR INFORMATION :
SIZE OF DIESEL-ELECTRIC GENERATOR - 1350 KW
YEAR INSTALLED - 81
OWNER - CANADIAN F. P.
% OF COMMUNITY'S NEEDS MET BY GENERATOR - 100 %
HOURS OF OPERATION PER DAY - 24
AVERAGE ENERGY PRODUCED - 600 KW
CUBIC METERS OF FUEL USED PER YEAR - 1752
COST OF FUEL/LT - $ 0.380
COST AND FREQUENCY OF MAINTENANCE - N/A

PLANS TO CHANGE ENERGY SUPPLY SITUATION : NO

FUEL PRICES AT COMMUNITY :
HEATING OIL PER LITRE - $ 0.360
ELECTRICITY-CENTS/KWH - N/A
PROPANE PER 100 lbs - $ 25.90
DIESEL FUEL PER LITRE - $ 0.380
REGULAR GAS PER LITRE - $ 0.490
FIREWOOD PER CORD - N/A
COAL PER KILOGRAM - N/A
OTHER : - N/A

AVERAGE HOUSEHOLD ENERGY BILL PER YEAR : N/A

UNSTUDIED POTENTIAL ENERGY ALTERNATIVES : HIGH POTENTIAL FOR MINI HYDRO SYSTEM BUT DUE TO ECONOMIC CLIMATE, NO STUDY DONE YET .

ANY ENERGY CONSERVING SYSTEMS : HEAT EXCHANGERS HEAT SHOP & WASTE HEAT IS USED TO HEAT THE BUNKHOUSES

ENERGY GRANTS OR PROGRAMS : N/A

% HOMES WELL INSULATED : N/A

REMARKS : YEAR ROUND LOGGING COMMUNITY. ELECTRICITY PROVIDED FREE TO RESIDENTS. A 230 kV LINE IS CLOSE

POOR
QUALITY
ORIGINAL